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THE EFFECT OF DIURETICS IN DIFFERENT TYPES OF EDEMA

MELVIN W. BINGER, M.D.

AND

NORMAN M. KEITH, M.D.

ROCHESTER, MINN.

Blackall,[1] an English physician, endeavored in 1813 to analyze a series of cases all presenting definite signs of dropsy. He showed that dropsy was due to several different causes. During the last nine years we have in a similar manner studied approximately 200 cases of varied types of edema. Our aim is to present the clinical observations and course of the various diseases in much the same fashion as Blackall, but in addition to give the results of certain biologic, chemical and therapeutic studies. The edema was actually controlled in some cases, whereas in others the treatment was unsuccessful. Thus, success or failure to rid the patient of edema could be, and was, subjected to critical analysis. We hope that the results reported in this paper will lead to the more general and accurate use of suitable diuretics in the treatment of edema, and possibly to the discovery of further helpful therapeutic agents.

CLINICAL GROUPS

In this study, 216 cases in which edema was present, comprising eight different types of disease, were considered. These were classified according to diagnosis, as represented in table 1. As will be observed in table 2, certain outstanding features were observed in each group.

In this study, renal function, as determined by the value for urea [5] in the whole blood (method of Marshall) and by excretion of intravenously injected phenolsulphonphthalein, was normal in the majority of cases. As would be expected, more severe renal insufficiency was noted in the cases of chronic glomerulonephritis and of myocardial degeneration associated with diffuse arterial disease.

Protein [6] was found in the urine in large amounts (graded 3 to 4) in all of the cases of lipoid nephrosis and in 92 per cent of the cases of chronic glomerulonephritis. In the other groups, usually only a small amount of protein was found in the urine.

The urine of each patient was examined many times to detect the presence of erythrocytes. If in a given case erythrocytes were never found in any examination, erythrocytes were said to be absent in that case. If, in a given case, erythrocytes were sometimes absent and sometimes present, but never in large numbers, the presence of erythrocytes was graded 0 to 1. If, in a given case, erythrocytes were always present and always in considerable numbers, the presence of erythrocytes was graded 2 to 4. The results are given in table 2.

Hyaline casts were present in varying numbers and were present in all cases of chronic lipoid nephrosis and in 96 per cent of the cases of chronic glomerulonephritis. They were present in both cases of myxedema and were less frequently observed in the other groups.

Tests of hepatic function were made in some cases of all groups; results are given in table 2. In only fourteen cases of all the groups was the value for serum bilirubin more than 3 mg. in each 100 cc., and in only four cases was there distinct jaundice.

The basal metabolic rate was determined in the cases of four groups (table 2). Estimations were made in six cases in each of the groups of myocardial degeneration and cirrhosis of the liver and with one exception all were normal or above normal.

We previously mentioned that there were thirty-nine cases of glomerulonephritis in which there were alterations in the chemistry of the blood similar to those found in lipoid nephrosis. Of these thirty-nine cases, in twenty-one the basal metabolic rate was less than minus 10, and in five of the twenty it was less than minus 20. In seventeen cases the rate was within normal limits, and in a single case it was plus 35, which was thought to be due to coexisting hyperthyroidism. Similar results were obtained in the cases of genuine lipoid nephrosis; in only three was the basal metabolic rate less than minus 10. Our experience would indicate that the low basal metabolic rate in lipoid nephrosis, found by Eppinger [7] and Epstein,[8] occurs only in a certain percentage of cases. The most obvious explanation of the decreased metabolism would be that it was due to undernutrition.

TREATMENT

The treatment consisted of the use of diuretics and of control of diet and of intake of fluid. In 96 per cent of all the cases the diet was controlled and contained protein from 40 to 60 Gm. and sodium chloride from 1 to 5 Gm. daily. The water component of the food

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Owing to lack of space, this article is abbreviated for publication in THE JOURNAL. The entire article appears in the authors' reprints.

From the Division of Medicine, the Mayo Clinic.

Read before the Section on Pharmacology and Therapeutics at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 14, 1933.

1. Blackall, John: Observations on the Nature and Cure of Dropsies, London, Longman, 1813.

5. During the period these cases were studied, the concentration of blood urea was considered the most dependable single test for estimating renal function. A concentration of more than 45 mg. in each 100 cc. of whole blood was considered abnormal, because among normal persons, when under a similar regimen to bring about dehydration, the value for blood urea rose to 45 mg. in each 100 cc.

6. Determined by the method of Exton. The reagent contains sodium sulphate and sulphosalicylic acid.

7. Eppinger, Hans: Zur Pathologie und Therapie des Menschlichen Oedems, Berlin, Julius Springer, 1917.

8. Epstein, A. A.: Thyroid Therapy and Thyroid Tolerance in Chronic Nephrosis, J. A. M. A. **87**: 913-918 (Sept. 18) 1926.

TABLE 1.—*Types of Cases*

Diagnosis	Cases: Males	Cases: Females	Cases: Total	Age, Years: Range	Age, Years: Mean	Age, Years: Median *	Age, Years: Standard Deviation †	Necropsy Cases
Subacute or chronic glomerulonephritis with edema	49	25	74	6-67	34.2	32	37.0	12
Chronic lipoid nephrosis	15	4	19	15-72	35.7	32	38.7	1
Myocardial degeneration with edema associated with:								
Diffuse arterial disease and hypertension	19	8	27	25-72	54.7	55	55.7	2
Chronic valvular disease	1	4	5	30-49	37.2	35	37.7	..
Pernicious anemia	1	..	1	62	....	..	....	..
Hepatic insufficiency with ascites:								
Portal or biliary cirrhosis of liver	39	14	53	19-76	51.6	52	52.9	5
Syphilitic cirrhosis	2	2	4	40-57	47.0	46	47.7	..
Cirrhosis with Banti's disease	1	4	5	17-64	44.0	47	....	2
Intra-abdominal malignancy	2	5	7	17-60	44.4	44	46.4	1
Polyserositis	5	6	11	19-65	33.4	29	36.1	..
Myxedema	..	2	2	55-60	57.5	..	....	..
General edema of indeterminate origin	5	3	8	9-69	43.3	42	46.9	..
Total	139	77	216					23

* Median, the age above and below which half the cases fall.
† Standard deviation measures the variability of the individual values.

salicylate.[10] These all were used singly and in combination. The diuretics most frequently selected, as will be noted in table 3, were ammonium chloride, ammonium nitrate and organic preparations of mercury. Derivatives of caffeine were used extensively; they were employed in 66 per cent of the cases of myocardial degeneration. However, in a number of cases of the different groups in which the values for blood urea were elevated and in which acid salts and organic compounds of mercury were contraindicated, theophylline calcium-calcium salicylate, theobromine and aminophylline were frequently effective. As has been demonstrated previously by Keith, Barrier and Whelan,[11] the organic compounds of mercury act more energetically as diuretics in combination with the acid salts ammonium chloride and ammonium nitrate, and the substances were employed in this combination in most of the cases of all groups. Engel and Epstein[12] also have found that ammonium bromide and decholin may enhance the diuresis caused by mercury. Shelling and Tarr[13] have shown a similar effect with magnesium sulphate injected intramuscularly. Calcium chloride was used to a less extent, and chiefly in the cases of chronic glomerulonephritis and chronic lipoid nephrosis. Ammonium chloride, ammonium nitrate or calcium chloride were given in doses of from 6 to

TABLE 2.—*Diagnostic Features*

Diagnosis	Total Cases	Edema: Grade	Edema: Cases, per Cent	Edema: Ascites, Cases, per Cent	Basal Metabolic Rate: Cases Tested	Basal Metabolic Rate: Normal Cases, per Cent	Basal Metabolic Rate: Below Normal, Cases, per Cent	Dye Test of Hepatic Function: Cases Tested	Dye Test of Hepatic Function: Retention, Grade	Blood, Cases, per Cent: Hemoglobin, Above or Below 70 per Cent*	Blood, Cases, per Cent: Urea, Normal Content	Urine: Protein: Grade	Urine: Protein: Cases, per Cent	Urine: Sediment, Cases, per Cent; Erythrocytes†: Absent	Urine: Sediment, Cases, per Cent; Erythrocytes†: Grade, 0-1	Urine: Sediment, Cases, per Cent; Erythrocytes†: Grade, 2-4	Urine: Hyaline Casts	Phenolsulphonphthalein Above 40 per Cent, Cases, per Cent
Subacute or chronic glomerulonephritis	74	2-4	85	61	49	40	50	16	0	— 77	72	3-4	92	11	70	8	96	64
Chronic lipoid nephrosis	19	2-4	79	31	14	79	21	1	0	+ 90	90	3-4	100	68	100	0	100	84
Myocardial degeneration	33	2-4	91	82	..	..	..	17	1-4	+ 64	76	0-2	79	94	7	0	64	70
Hepatic insufficiency	62	1-3	82	100	..	..	..	58‡	0-4	— 71	89	0-1	72	66	24	8	56	61
Intra-abdominal malignancy	7	1-3	57	100	..	..	..	3	1-4	— 71	100	0-2	100	100	0	0	45	71
Polyserositis	11	1-3	64	100	..	..	..	10§	0-4	+ 64	100	0-2	100	33	55	9	45	..
Myxedema	2	1-2	100	100	2	0	100	1	0	—100	50	0-1	100	100	0	0	100	50
Indeterminate edema	8	2-3	87	75	6	50	50	7	0	+ 87	87	0-2	100	75	100	0	87	62

* Interpretation of quantities in the column: —77 = 77 per cent of cases in which value for hemoglobin was less than 70 per cent; +90 = 90 per cent of cases in which value for hemoglobin was more than 70 per cent, and so on.
† Interpretation of quantities in the column is given in the text.
‡ No retention in three cases.
§ No retention in one case.

ingested was limited to from 800 to 1,400 cc. daily, in all of the cases of glomerulonephritis, lipoid nephrosis, hepatic insufficiency, intra-abdominal malignant conditions, polyserositis, and general edema of indeterminate origin.

The same limitation on the water component of the food was applied in 70 per cent of the cases of heart disease and in one of the two cases of myxedema. The intake of extra fluid in the form of water and other beverages was limited to 800 cc., so that the total intake of fluid amounted to from 1,600 to 2,200 cc. in 75 per cent of all cases.

The diuretics most commonly employed were ammonium chloride; ammonium nitrate; calcium chloride; the organic compounds of mercury, mersalyl and merbaphen,[9] and the derivatives of caffeine theobromine, theocin, aminophylline and theophylline calcium-calcium 10 Gm. daily,[14] and as much as 600 Gm. of ammonium chloride or ammonium nitrate was given during a period of treatment. The derivatives of caffeine were given in the usual doses, at times singly and at other

9. Saxyl, Paul, and Heilig, Robert: Ueber die diuretische Wirkung von Novasurol und anderen Quecksilberinjectionen, Wien. klin. Wchnschr. **33:** 943-944 (Oct. 21) 1920.

10. Other substances which sometimes cause diuresis were occasionally employed. For example, thyroid extract,[8] parathyroid extract (McCann, W. S.: The Diuretic Action of Parathyroid Extract-Collip in Certain Edematous Patients, J. A. M. A. **90:** 249-253 [Jan. 28] 1928) and compounds of bismuth (Hanzlik, P. J.; Bloomfield, A. L.; Stockton, A. B., and Wood, D. A.: Diuresis from Water-Soluble Bismuth: Bismuth Sodium Tartrate in Subjects With and Without Edema, J. A. M. A. **92:** 1413-1416 [April 27] 1929. Mehrtens, H. G.; Hanzlik, P. J.; Marshall, D. C., and Brown, H. S.: Bismuth as a Diuretic, ibid. **91:** 223-225 [July 28] 1928. Stockton, A. B.: Bismuth Diuresis and the Blood and Urinary Changes Under Clinical Conditions, Arch. Int. Med. **50:** 142-149 [July] 1932), but our data are meager and are not included in this report.

11. (*a*) Keith, N. M., and Whelan, Mary: A Study of the Action of Ammonium Chloride and Organic Mercury Compounds, J. Clin. Investigation **3:** 149-202 (Oct.) 1926; (*b*) The Combined Diuretic Action of Certain Acid Producing Salts and Organic Mercury Compounds, Tr. A. Am. Phys. **41:** 181-189, 1926. (*c*) Keith, N. M.; Barrier, C. W., and Whelan, Mary: The Diuretic Action of Ammonium Chloride and Novasurol in Cases of Nephritis with Edema, J. A. M. A. **85:** 799-806 (Sept. 12) 1925.

12. Engel, Karl, and Epstein, Tibor: Die Quecksilber-diurese, Ergebn. d. inn. Med. u. Kinderh. **40:** 187-261, 1931.

13. Shelling, D. H., and Tarr, Leonard: The Combined Use of Magnesium Sulphate and Salyrgan as a Diuretic in Cardiac Edema, M. J. & Rec. **131:** 365-366 (April 2) 1930.

14. Larger doses were occasionally given. Two patients received 18 Gm. of calcium chloride and three patients ammonium nitrate, 12 Gm. daily.

times in combination with organic compounds of mercury. Organic compounds of mercury, in the form of merbaphen or mersalyl, were always given in a small initial dose of 0.5 cc., and if no untoward reactions occurred, 2 cc. was given at intervals of three days or more thereafter. Merbaphen was injected beneath the skin, into the muscles and into the veins, but mersalyl only intravenously. As much as 35.5 cc. of the organic compounds of mercury was given to one patient.

EFFECT OF TREATMENT

Immediate.—On the whole, a summary of the immediate effect of treatment was gratifying (table 4). The average loss of weight varied somewhat in each group studied and was greatest in the cases of myocardial degeneration.

An ineffectual result of treatment was indicated by slight or no diuresis, inability to reduce edema materially, or progressive course of the disease. Such results occurred most often among the cases of intra-abdominal malignancy.

TABLE 3.—*Treatment* *

Diagnosis	Total Cases	Ammonium Chloride: Cases, per Cent	Ammonium Chloride: Average Amount, Gm.	Calcium Chloride: Cases, per Cent	Calcium Chloride: Average Amount, Gm.	Ammonium Nitrate: Cases, per Cent	Ammonium Nitrate: Average Amount, Gm.	Organic Compounds of Mercury: Cases, per Cent	Organic Compounds of Mercury: Average Amount, Gm.	Derivatives of Caffeine: Cases, per Cent	Derivatives of Caffeine: Average Amount, Gm.
Subacute or chronic glomerulonephritis	74	49	102	11	103	57	164	68	8.6	31	11.1
Chronic lipoid nephrosis	19	37	99	26	88	47	144	68	4.6	21	39.1
Myocardial degeneration	33	42	107	..	...	36	123	82	6.9	66	6.3
Hepatic insufficiency	62	76	138	2	28	39	98	98	10.1	23	6.1
Intra-abdominal malignancy	7	70	89	..	...	28	69	100	5.6	14	5.0
Polyserositis	11	55	177	..	...	55	132	91	10.8	46	9.3
Myxedema	2	50	28	..	...	50	58	100	6.6	..	....
Indeterminate edema	8	75	124	12	153	37	57	62	3.3	12	1.4

* The diet is outlined in the text.

TABLE 4.—*Immediate Effect of Treatment*

Diagnosis	Total Cases	Duration of Treatment, Average Days	Volume of Urine, 2,000 Cc. or More in 24 Hours; Cases, per Cent	Edema After Treatment: None, Cases, per Cent	Edema After Treatment: Grade 1 or Less, Cases, per Cent	Loss of Weight, Kg.: Maximum	Loss of Weight, Kg.: Average	Immediate Results of Treatment: Good, Cases, per Cent	Immediate Results of Treatment: Failure, Cases, per Cent
Subacute or chronic glomerulonephritis	74	41	65	63	27	27	11.0	65	30
Chronic lipoid nephrosis	19	27	58	79	16	38	12.0	100	..
Myocardial degeneration	33	32	94	79	21	52	21.0	73	12
Hepatic insufficiency	62	31	82	90	5	24	12.0	80	20
Intra-abdominal malignancy	7	21	57	71	14	17	12.0	43	43
Polyserositis	11	33	91	73	27	33	14.0	64	36
Myxedema	2	32	50	50	50	12	8.0	50	..
Indeterminate edema	8	22	75	50	37	23	10.0	87	13
Total	216		75	75	19		12.5	73	27

Toxic Reactions.—Untoward reactions, both local and general, were noted in certain cases of all the groups studied. They are recorded in table 5. One of the toxic reactions, increased renal insufficiency, was evidenced by increase in concentration of blood urea and lowering of the return of phenolsulphonphthalein. Another toxic reaction was acidosis. Local necrosis, stomatitis, gross hematuria and diarrhea could be traced to the administration of organic compounds of mercury. Local necrosis was observed in three cases, following injection, intramuscularly or subcutaneusly, of mersalyl. When given intravenously, this did not occur. Local necrosis did not occur in any instance following intramuscular or subcutaneous injection of merbaphen.

Stomatitis, although uncommon, appeared in nine cases following administration of organic compounds of mercury and more frequently following the use of merbaphen than the use of mersalyl. Gross hematuria, which was observed during treatment, followed the administration of organic mercury.

The occurrence of diarrhea usually followed the administration of merbaphen but sometimes followed the administration of mersalyl. This was not persistent and subsided in a day or two after cessation of the administration of organic compounds of mercury.

Methemoglobinemia, as evidenced by cyanosis and the finding of methemoglobin in the blood, was noted only with the administration of ammonium nitrate. In only one case did it seem to be a serious complication.[15]

With reactions resulting both in renal insufficiency and in the production of acidosis, a more serious problem presented itself. In eighty-nine of the 216 cases (table 5), increase in the value for blood urea developed during treatment. In thirty-four of the eighty-nine cases, the value for blood urea was more than 45 mg. in each 100 cc. on admission; in twenty-eight of these the concentration fell to normal before the patients left the hospital. In fifty-three of the eighty-nine cases the value for blood urea returned to normal before dismissal of the patients.

It often has been observed, with the administration of the acid salts ammonium chloride or ammonium nitrate, together with organic compounds of mercury, that there will be marked diuresis, associated with a rise in concentration of blood urea and, especially when ammonium chloride is given, a fall in the carbon dioxide combining power of the plasma. Whether the renal insufficiency, as shown by the rise in value for blood urea, is due in these cases to the acidosis, to the dehydration or to the direct irritative action on the renal epithelium, or to a combination of these factors, has not been definitely determined. Usually this reaction is seen in cases in which there previously has been renal injury, as evidenced by elevated values for urea and low output of phenolsulphonphthalein.

15. Eusterman, G. B., and Keith, N. M.: Transient Methemoglobinemia Following Administration of Ammonium Nitrate, M. Clin. North America **12**: 1489-1496 (May) 1929.

Decreased Alkali Reserve.[16]—The carbon dioxide combining power of the plasma was usually normal in these cases on admission. The well known acidosis that is known to be produced by acid salts[17] led us to make, after administration of these salts, frequent determinations of the bicarbonate reserve of the plasma

TABLE 5.—*Toxic Reactions to Treatment*

Diagnosis	Total Cases	Local Necrosis, Cases	Stomatitis, Cases	Gross Hematuria, Cases	Diarrhea, Cases	Methemoglobinemia, Cases	Increased Renal Insufficiency*	
							Cases	Per Cent
Subacute or chronic glomerulonephritis	74	3	2	5	3	2	47	64
Chronic lipoid nephrosis	19	0	0	1	0	0	4	21
Myocardial degeneration	33	0	2	0	1	0	8	24
Hepatic insufficiency	62†	0	4	0	7	0	23	37
Intra-abdominal malignancy	7	0	0	0	1	0	2	18
Polyserositis	11	0	0	0	0	1	3	27
Myxedema	2	0	0	0	0	0	1	..
Indeterminate edema	8	0	1	0	0	1	1	12
Total	216	3	9	6	12	4	89	41

* As determined by the value for blood urea. In the majority of cases, the excretion of phenolsulphonphthalein also was determined and was found decreased.

† One case of nitrite-like reaction; three cases of toxic dermatitis.

in 109 of the cases in this series (table 6). The intake of food and fluid was controlled in the manner mentioned previously. It was the rule to estimate the value for urea, the chloride and the bicarbonate reserve from the same specimen of blood. This procedure was a test of certain effects of an excess of inorganic acid on the metabolism of patients with edema; it also gave us information as to the relative action of these acid radicals in different diseases, as for example in chronic glomerulonephritis, myocardial degeneration, and cirrhosis of the liver. The total amount of acid-producing salt exhibited before the sample of blood was withdrawn varied from 9 to 412 Gm. (the daily amount averaging from 5 to 10 Gm.). The chlorides of ammonium and calcium caused a distinct shift in the acid direction much more consistently than ammonium nitrate. This fact we had noted in previous work.[18] So-called chloride acidosis, in which the plasma chloride was almost invariably increased, was produced in fifty-six cases by doses of from 9 to 412 Gm. of ammonium chloride or calcium chloride, and in eight of these, all cases of glomerulonephritis, the carbon dioxide combining power of the plasma decreased markedly to 20 volumes per cent or less. On the other hand, ammonium nitrate in amounts of from 28 to 78 Gm. produced a moderate fall in the carbon dioxide capacity of the plasma in only four cases. The relative occurrence of acidosis among fifty-eight cases of the different types of edema are given in table 6. Acidosis occurred in a high percentage of cases of glomerulonephritis, indeterminate edema, abdominal malignancy and hepatic insufficiency, and much less frequently in cases of cardiac disease and lipoid nephrosis. Acidosis also seemed more likely to occur in cases in which there was hepatic and myocardial injury, when complicated by renal insufficiency. In three cases of hepatic insufficiency the plasma carbon dioxide combining power fell to less than 30 volumes per cent and serious renal involvement was indicated by concentrations of blood urea of from 72 to 89 mg. in each 100 cc. In only one case of this series was the acidosis severe enough to produce respiratory difficulty.[11c] In this, a case of glomerulonephritis, following the giving of 25 Gm. of ammonium chloride in five days, typical Kussmaul breathing developed, the carbon dioxide combining power of the plasma decreased to 9 volumes per cent, and the value for blood urea rose from 109 to 276 mg. in each 100 cc. This patient's acidosis, fortunately, was successfully combated by intravenous injection of sodium bicarbonate. We believe that marked acidosis, such as occurred in this case, can be avoided, since this severe condition has subsequently never developed in any of our cases.

Usually the degree of acidosis present produces no respiratory or other untoward symptoms.[19] In some cases the reduction in plasma carbon dioxide is only slight after continuous giving of large doses of ammonium chloride. This fact suggests that the body may, under these conditions, gradually develop a satisfactory buffer mechanism to this salt. The observations of Keith and Whelan, that the early acidosis may clear and the carbon dioxide combining power of the plasma return to normal, and the finding of Dennig, Dill and Talbott[20] of similar changes in the p_H of arterial blood, support such a view. In twenty-nine of our cases in which acidosis developed, the concentration of blood urea was normal, whereas in twenty-six there was an associated rise in the value for blood urea ranging from 46 to 130 mg. in each 100 cc., if we omit the case of severe acidosis mentioned in which the value for blood urea rose to 276 mg. in each 100 cc. A marked rise in the value of blood urea, along with acidosis, following administration of ammonium chloride or calcium

TABLE 6.—*Effect of Acid Salts on Carbon Dioxide Combining Power and Urea of Plasma*

Diagnosis	Patients Given Acid Salts	Carbon Dioxide Combining Power Above 40 per Cent by Volume		Carbon Dioxide Combining Power Below 40 per Cent by Volume	
		Urea Below 45 Mg. per Cent, Cases	Urea Above 45 Mg. per Cent, Cases	Urea Below 45 Mg. per Cent, Cases	Urea Above 45 Mg. per Cent, Cases
Subacute or chronic glomerulonephritis	32	5	2	11	14
Chronic lipoid nephrosis	9	6	2	1	0
Myocardial degeneration	12	6	2	2	1*
Hepatic insufficiency	40	13	10	8	8*
Intra-abdominal malignancy	3	0	0	1	2
Polyserositis	5	3	0	2	0
Myxedema	1	0	1	0	0
Indeterminate edema	7	1	0	4	1*
Total	109	34	17	29	26

* In three cases, plasma urea not estimated. Fifty-six patients with acidosis received chloride, from 9 to 412 Gm., and organic mercury, from 0.5 to 21.5 cc. Four patients with acidosis received ammonium nitrate from 28 to 78 Gm., and organic mercury, from 1 to 10.5 cc.

16. It is recognized that a shift in acid-base equilibrium toward the acid side may be compensated in the blood plasma and still the p_H of the urine be strongly acid. We have arbitrarily decided in this paper to consider "acidosis" present only when the carbon dioxide combining power of the blood plasma was below 40 volumes per cent. When the carbon dioxide combining power of the plasma was more than 40 volumes per cent, compensated acidosis was said to exist; when less than 40 volumes per cent, the acidosis was said to be uncompensated.

17. (*a*) Gamble, J. L.; Blackfan, K. D., and Hamilton, Bengt: A Study of the Diuretic Action of Acid-Producing Salts, J. Clin. Investigation **1**: 359-388 (April) 1925. (*b*) Haldane, J. B. C.: Experiments on the Regulation of the Blood's Alkalinity: II. J. Physiol. **55**: 265-275 (Aug.) 1921. (*c*) Keith, N. M.; Barrier, C. W., and Whelan, Mary: Treatment of Nephritis and Edema with Calcium, J. A. M. A. **83**: 666-670 (Aug. 30) 1924.

18. Keith, N. M.; Whelan, Mary, and Bannick, E. G.: The Action and Excretion of Nitrates, Arch. Int. Med. **46**: 797-832 (Nov.) 1930.

19. Keith and Whelan.[11a] Morris, Noah, and MacRae, Olive: Metabolic Reactions to Acidosis Produced by Ammonium Chloride, Arch. Dis. Child. **5**: 207-228, 1930.

20. Dennig, H.; Dill, D. B., and Talbott, I. H.; Bilanzuntersuchung einer Salmiakazidose, Arch. f. exper. Path. u. Pharmakol. **144**: 297-310, 1929.

chloride is a definite contraindication to the further use of these substances.

In fifty-one cases, or 47 per cent of the 109 cases in which acid salts were given, the carbon dioxide capacity of the plasma was more than 40 volumes per cent at the time of the analysis of blood. In other words, partial or complete compensation for the acidosis had taken place in the plasma. In thirty-four of these fifty-one cases there was no rise in concentration of blood urea, whereas in seventeen cases it was increased from 46 to 95 mg. in each 100 cc. Thus, in a small group in which the acidosis is compensated, renal insufficiency does occur, but fortunately it is as a rule, of short duration. It is of interest to point out that early clinical observations indicated that acid salts could be given in large doses to patients with anasarca without apparent toxic effect. There is now chemical evidence that this is often a fact. Conversely, certain patients of this series, with persistently small or moderate amounts of edema when given acid salts, quickly gave evidence of acidosis and renal impairment.

Organic compounds of mercury were given to many of these patients in doses of from 0.5 to 21.5 cc. (from one to eleven injections) during the period of ingestion of acid salts. The injections of mercury did not appear to enhance the acidosis, nor did the presence of moderate acidosis seem to increase the frequency of toxic effects from mercury. In a single case, following the giving of 0.5 cc. of merbaphen when marked acidosis was present, the carbon dioxide combining power had been reduced to 13 volumes per cent by administration of ammonium chloride, and severe stomatitis and convulsions developed. Several days later this patient, while taking ammonium nitrate, did not give evidence of acidosis, and injection of 2 cc. of mersalyl caused no rise in the value for blood urea or other abnormal conditions.

The results of this study of acidosis occurring in various types of edema due to administration of acid salts indicate that the acidosis itself only rarely causes serious toxic effects and that these can be reduced to a minimum when the cases are suitably selected and the administration carefully controlled. Acidosis was produced in several cases in which the diuretic response was satisfactory and the subsequent course remarkably good. Such a result was obtained in our first case in which ammonium chloride was administered nine years ago.[17c] The patient, a woman, continues to be free from edema and has excellent general health. The dose of chloride should be carefully estimated and its effect on the carbon dioxide combining power and the chloride and urea content of the blood plasma should be observed from time to time. Severe acidosis thus can be avoided. Ammonium nitrate has much less tendency than ammonium chloride to produce acidosis; therefore it can be used in a larger series of cases, and especially in those in which administration of chloride might be contraindicated.

Ultimate Course.—A follow-up investigation of the 216 patients of all groups showed that 104, or approximately half, returned one or more times for further observation. The usual reasons for returning were for reexamination or because of recurrence of edema. Two patients returned nine times each. Review disclosed the results recorded in table 7.

The highest mortality has been among the cases of intra-abdominal malignancy with 85 per cent deaths. Of the patients with hepatic insufficiency, 79 per cent died, and of those with glomerulonephritis the percentage of deaths was 68. Sixty-four per cent of the patients with myocardial degeneration died. Only one patient with nephrosis died; in this case, acute septicemia developed following tonsillectomy. Neither of the patients with myxedema, and only two of the patients of the indeterminate group, died.

COMMENT

The most constant effect of the therapeutic measures employed in this study was the production of marked diuresis in all types of edema. Similar results have been reported in types of edema not included in this paper, as, for example, by de Takáts,[21] in acute edema caused by thrombophlebitis. The edema frequently disappeared and the patient's subsequent course was satisfactory. This happy result occurred very often in cases of lipoid nephrosis, in the group of cases of indeterminate edema, and in a limited number of cases of myocardial degeneration, cirrhosis of the liver and chronic glomerulonephritis. Other patients, in spite of only temporary decrease in the edema and the necessity of continuous treatment, derived much comfort. However, in many cases in which there was serious cardiac, renal or hepatic injury, even with subsidence of the edema, the usual progressive course of the disease was not altered.

TABLE 7.—*Ultimate Course*

Diagnosis	Total Cases	Known Living 4 Years After Onset: Cases*	Known Living 4 Years After Onset: Per Cent*	Known Dead; Duration of Life After Onset: Cases	Known Dead; Duration of Life After Onset: Mean, Months	Known Dead; Duration of Life After Onset: Standard Deviation, Months
Subacute or chronic glomerulonephritis	74	15	20	50	35.3	43.0
Chronic lipoid nephrosis	19	11	58	1	2.0	....
Myocardial degeneration	33	6	18	21	40.3	48.0
Hepatic insufficiency	62	10	16	49	23.5	31.6
Intra-abdominal malignancy	7†	1	14	6	5.0‡	5.9‡
Polyserositis	11	2	18	9	41.9	49.0
Myxedema	2	2	100	0	....	....
Indeterminate edema	8	6	75	2§	9.0	....
Total	216	53	24	138		

* This represents a minimum figure, since recent cases (onset less than four years ago), patients still alive, are not included.

† Unable to trace one patient.

‡ Excludes one patient who lived seven years.

§ One death due to coronary occlusion, and one following third laparotomy.

Obvious toxic effects, such as stomatitis, diarrhea and dermatitis, occurred very infrequently. They occurred relatively more often in cases of hepatic insufficiency than in any other single group of cases and usually followed injections of merbaphen. The most frequent toxic effect was definite renal insufficiency, which was present in approximately half the cases. With this renal insufficiency, clinical symptoms of a toxic nature were usually absent. As one would naturally surmise, renal insufficiency occurred most frequently in cases of glomerulonephritis, but it also occurred in a considerable number of cases of hepatic disease. Fortunately, in the majority of instances it was a temporary dysfunction, and the value for blood urea fell to the normal concentration and the excretion of phenolsulphonphthalein rose before dismissal of the patient. On the other hand, the renal impairment of 16 per cent of all patients treated was of longer duration and was still present at dismissal. Severe acidosis,

21. de Takáts, Géza: The Management of Acute Thrombophlebitic Edema, J. A. M. A. **100**: 34-37 (Jan. 7) 1933.

when caused by ingestion of ammonium chloride or calcium chloride, may be accompanied by marked renal insufficiency. By careful administration of these salts, such an untoward event can be prevented. It is well to point out that in the compensated acidosis that so frequently is present after these acid salts, particularly ammonium nitrate, have been taken, mild renal impairment does sometimes occur, but it disappears quickly when the administration of the salt is discontinued. Dehydration resulting from both a low intake of water and a large output of water from continuous diuresis is a possible etiologic factor in the production of this temporary renal insufficiency. In uncomplicated cases of myocardial degeneration, toxic reactions seem less likely to occur than in cases in which there are either renal or hepatic lesions. This finding is in agreement with previous observers.[22]

Organic compounds of mercury, administered in large and rapidly repeated doses, are undoubtedly toxic to the kidneys and other organs.[23] When they are employed as advocated in this paper, we have seen surprisingly little evidence of definite toxicity. Mersalyl is the compound of choice. When gross hematuria did take place after an injection, in several instances the patient later tolerated an equal or larger dose without apparent harm. By using the urea clearance test, Polland[24] has shown that merbaphen depresses the capacity of the kidney of the normal person to excrete urea. Page,[25] on the other hand, after the administration of organic compounds of mercury, has found no change in results of the urea clearance test in a small group of cases in which arteriosclerotic kidneys and chronic glomerulonephritis were present. Further studies with this test, and with other more sensitive determinations than that of concentration of blood urea and excretion of phenolsulphonphthalein, are necessary for a final conclusion. However, two facts are important in this discussion: (1) that when a mild degree of renal insufficiency develops after the administration of mercury it is of very short duration, and (2) that many patients with edema have tolerated large amounts of mercury, given at regular intervals, with subsequent satisfactory renal function.

Undoubtedly a shift in acid-base equilibrium toward the acid side occurred in all cases in which a sufficient dose of an acid-producing salt was given. Those salts which contain chloride produced it in greater degree and more rapidly than those which contain nitrate. Part of the diuretic effect of these salts is probably due to this change in the acid-base equilibrium; so that the presence of compensated, or even moderately uncompensated, acidosis is assumed to be a desirable action. Too marked acidosis may, on the other hand, cause dangerous effects. When demonstrable renal insufficiency is present, administration of acid salts must be carried out cautiously. In many cases in which this treatment was given, the subsequent diuresis was very beneficial. In other cases the development of more marked renal failure contraindicated their further use.

A large amount of both laboratory and clinical investigative work has been done on the relation of the concentration of plasma protein to the formation of edema. In this series of cases, diuresis apparently occurred just as often in cases in which the value for plasma protein was low as in those in which the value was normal. As a matter of fact, our cases of lipoid nephrosis in which the value for plasma protein was lowest responded well to diuretics. In cases of lipoid nephrosis with very stubborn edema, Hartmann, Senn, Nelson and Perley[26] have injected solution of acacia intravenously, thus raising the osmotic pressure of the plasma, with some encouraging results. Diets[8] high in protein given to increase the protein in the plasma, and secondarily to decrease the edema, have not been effective in our experience. A diet comparatively low in protein, in our study at least, did not prejudice the diuretic action of the drugs employed.

In any consideration of the action of these diuretic drugs, the general and renal effect must be considered. The acid chlorides alter the acid-base equilibrium and raise the level of plasma chlorides. Both factors aid diuresis.[27] In cases in which the value for plasma chloride is low, acid chlorides raise it to the effective diuretic level.[11a] Nitrate apparently can cause a fall in the concentration of plasma chloride, which in turn is followed by a diminishing diuresis. This fact explains the beneficial substitution of chloride for nitrate. Too much chloride may give rise to renal insufficiency. Could this be caused by too great a shift in the p_H of the renal cells, as suggested by Stieglitz's[28] experiments? A balanced chloride action is thus desirable for developing its optimal general and renal diuretic effect. Blumgart, Gilligan, Levy and Brown[29] have shown that metaphyllin may be an ineffectual diuretic agent when the value for sodium in the plasma falls to a low concentration, even though the value for chloride be normal. When it was increased by the ingestion of a sodium salt, spontaneous polyuria occurred. They expressed the belief that an optimal concentration of sodium, in addition to that of chloride in the plasma, is important for diuresis and may in part be the reason for the production of diuresis by alkaline salts. Melville and Stehle,[30] in their experimental work with compounds of mercury, stressed their general action on tissue because there is a definite latent period before diuresis begins. Bieter's[31] experiments on the action of mercury in plasma, and Engel's and Epstein's observations in the absorption of isotonic solution from the skin, also suggest a general effect on tissue. The experiments of Govaerts,[32] and of Christian and Bartram,[33] on the other hand, emphasize the marked renal action in diuresis caused by compounds of mercury.

Recent advances in renal physiology suggest that different types of diuretics might have specific actions on

22. Crawford, J. H., and McIntosh, J. F.: Observations on the Use of Novasurol in Edema Due to Heart Failure, J. Clin. Investigation **1**: 333-358 (April) 1925.

23. Johnstone, B. I., and Keith, H. M.: Toxicity of Novasurol (Merbaphen): Its Action on the Kidney of the Rabbit, Arch. Int. Med. **42**: 189-216 (Aug.) 1928. Keith, H. M., and Johnstone, B. I.: The Action of Merbaphen (Novasurol) on the Kidney of the Dog: A Combined Functional and Pathologic Study, ibid. **44**: 438-454 (Sept.) 1929. Nonnebruch, W.: Ueber Diurese, Ergebn. d. inn. Med. u Kinderh. **26**: 119-206, 1924. Rowntree, L. G.; Keith, N. M., and Barrier, C. W.: Novasurol in the Treatment of Ascites in Hepatic Disease, J. A. M. A. **85**: 1187-1193 (Oct. 17) 1925.

24. Polland, W. S.: The Effect of Some Diuretics on the Urea Excreting Capacity of the Kidney, Am. J. Physiol. **85**: 141-148 (May) 1928.

25. Page, I. H.: The Action of Certain Diuretics on the Function of the Kidney as Measured by the Urea Clearance Test, J. Clin. Investigation **12**: 737-739 (July) 1933.

26. Hartmann, A. F.; Senn, M. J. E.; Nelson, M. V., and Perley, A. M.: The Use of Acacia in the Treatment of Edema, J. A. M. A. **100**: 251-254 (Jan. 28) 1933.

27. Curtis, G. M.: The Action of the Specific Diuretics, J. A. M. A. **93**: 2016-2018 (Dec. 28) 1929.

28. Stieglitz, E. J.: Histologic Hydrogen Ion Studies of the Kidney, Arch. Int. Med. **33**: 483-496 (April) 1924.

29. Blumgart, H. L.; Gilligan, Dorothy R.; Levy, R. C., and Brown, M. G.: The Effect of Diuretics on Water and Salt Metabolism, Tr. A. Am. Phys. **47**: 304-307, 1932.

30. Melville, K. I., and Stehle, R. L.: Mercury Diuresis, J. Pharmacol. & Exper. Therap. **34**: 209-222 (Oct.) 1928.

31. Bieter, R. N.: The Kidney in Health and Disease, University of Minnesota Symposium, July, 1930, to be published.

32. Govaerts, Paul: Origine rénale ou tissulaire de la diurèse par un composé mercuriel organique, Compt. rend. Soc. de biol. **99**: 647-649, 1928.

33. Christian, H. A., and Bartram, E. A.: Experimental Observations on the Action of Diuretics, Tr. A. Am. Phys. **47**: 292-303. 1932.

the glomerulus or tubule. Schmitz [34] employing the creatinine clearance test, was able to show that merbaphen and aminophylline had quite different effects on the renal excretion of creatinine. Herrmann [35] obtained similar results. Because there is some question as to the exact significance of creatinine clearance by the kidney, we do not feel that the results of Schmitz and of Herrmann have yet established the facts that mercury exerts its diuretic action by diminishing reabsorption of water by the tubules, and that the effect of aminophylline depends on its increasing glomerular excretion. Experiments of Smith and his co-workers [36] with the renal excretion of certain sugars have suggested that these sugars pass through the glomerulus and are not reabsorbed by the tubules. It will be of interest to see how much new information these investigations can give in this subtle field of the renal action of diuretics.

Potassium salts have been known for many years to have a dehydrating effect on the animal organism. Wilks and Taylor [37] in 1863 administered potassium nitrate by mouth to a patient with nephritic edema, with success. The toxic effects of potassium salts, when administered by vein, deterred physicians for many years from using them in clinical medicine. Barker [38] has recently introduced the use of potassium chloride by mouth in cases of cardiac and renal edema. He has seen no toxic effects, and the diuretic effect, in some cases, has been very satisfactory. We have confirmed his results in a few cases. This action of potassium chloride suggested to us a trial of potassium nitrate in place of ammonium nitrate. The nitrate ion has definite diuretic properties, and potassium should have a greater dehydrating effect than the ammonium radical. We have used it in several cases of edema in the last few months and it has proved a valuable addition to the list of diuretic drugs. Further study as to its action on the blood and urine are now being carried out.

The ideal diuretic has yet to be discovered. In the last fifteen years, experimental work and clinical observation have added much to knowledge as to the action and therapeutic results of various types of diuretics. This should give much hope for their continued development in the future.

ABSTRACT OF DISCUSSION

DR. M. HERBERT BARKER, Chicago: This therapeutic plan of diet and diuretic substances is effective in 75 per cent of the authors' cases. One must not be satisfied to treat the symptoms of edema. The edematous patient is always markedly wasted, so that he must be built up generally and maintained. The plan given here lends itself well to the removal of fluid from the tissues and to the support and maintenance of the patient. One cannot emphasize the dietary care too much. The use of the specific diuretics requires consideration as to the type of patient. In my experience, patients of myocardial type tend to show a higher carbon dioxide combining power and indicate in the general check of acid-base equilibrium that they are on the alkaline side. A diuretic plan composed of acidotic salts and a diet with an acid ash has been extremely beneficial in my hands. The reverse, however, is true of the nephrotic group. They usually present high chlorides and relatively low carbon dioxide combining power, and the acid-forming salts such as ammonium chloride and calcium chloride, frequently within a few days, while producing diuresis, will carry them into a state of peculiar acidosis with depression and nitrogen retention. Ammonium nitrate, or even potassium chloride, seems to be a much better salt in that particular case. I find that patients change very rapidly, depending on the plan in use, and that the plan that is effective one day may need definite changes within a few days. The optimum of hydration and dehydration is not easily measured, but in following the chlorides, the carbon dioxide and perhaps the serum proteins for concentration and dilution, one has a great adjunct in the care of these patients.

DR. EDWARD J. STIEGLITZ, Chicago: Since Martin Fischer pointed it out, patients have been flooded with alkalis and sometimes their edema subsided and sometimes it got much worse. More recently, acid-forming salts, ammonium chlorides and ammonium nitrate have been used with much better results. The fundamental reason probably lies in the tissues. But in part it may lie in the kidney structure. It was demonstrated some years ago that, when the urine is acid in reaction, the cells of the tubules are alkaline in reaction, and when the urine is made alkaline, the cells are acidified. The cells of the convoluted tubules in the loops of Henle have exactly the opposite reaction to the urine. Alkali therapy in a nephritic as well as in a normal individual tends to make the reaction of the cells opposite to their normal reaction; theoretically it is justifiable to assume that they are probably less efficient when their hydrogen ion concentration is not their normal one. On the other hand, acidifying the urine more strongly with the addition of acid salts tends to alkalinize the reaction in the cells of the convoluted tubules in the loops of Henle; in other words, to approach more the normal reaction. An effort has been directed toward the elimination of edema as water. Water is probably the least important part of the edema. Edema fluid is toxic; it contains a great deal of toxic material. The modern conception should consider edema as a protective mechanism to remove from the circulation toxic and noxious substances. If that is the case, the prime consideration is not the removal of water alone but the removal of the toxic material that is responsible for the accumulation of water. During these diuretic periods as the edema subsides, the patient, in the majority of instances, becomes much more intoxicated, much more sick than he was during the period of the accumulation. This does not mean that one should encourages edema, not try to treat it at all; that would be a very unjustified and dogmatic statement. It means that during the subsidence of the edema it is perhaps safer to cover the diuresis with an adequate water intake and perhaps let the patient lose 1 liter of his edema fluid daily plus 1 liter of fresh water so that the intoxication is not made too great.

DR. NORMAN M. KEITH, Rochester, Minn.: The problem of edema is very complicated. The fact that it is possible to rid the body of this abnormal fluid in a good percentage of cases, of course, does not mean that the patients are being cured of their primary disease. The point brought out by Dr. Barker that the diet is important is especially to be stressed. We had a man with marked anasarca due to renal disease who was finally rid of his edema by different diuretics. At this time we found him in a condition much like a convalescent case of typhoid. The metabolism was low. He needed protein, and when we gave it in large amounts he stored it for days and gradually came up to his original weight. The point brought up by Dr. Stieglitz is also fundamental, because we have noted that, when the amount of chloride administered is above a certain amount, acidosis develops and with the acidosis the patient may have severe renal insufficiency. The chlorides must be above a certain level in the plasma for diuresis to be effective, but if it is too high it may affect the renal cells in some way that is not understood. Finally there is the question of renal insufficiency. Dr. Stieglitz brought up the point that some of these patients, when they are dehydrated, become toxic. We had a case of liver insufficiency with cirrhosis with very little jaundice and yet when this treatment was given the patient

34. Schmitz, H. L.: Studies on the Action of Diuretics: I. The Effect of Euphillin and Salyrgan upon Glomerular Filtration and Tubular Reabsorption, J. Clin. Investigation **11**: 1075-1097 (Nov.) 1932.

35. Herrmann, George; Stone, C. T.; Schwab, E. H., and Bondurant, W. W.: Diuresis in Patients with Congestive Heart Failure, J. A. M. A. **99**: 1647-1652 (Nov. 12) 1932.

36. Jolliffe, Norman; Shannon, J. A., and Smith, H. W.: The Excretion of the Urine in the Dog: III. The Use of Nonmetabolized Sugars in the Measurement of the Glomerular Filtrate, Am. J. Physiol. **100**: 301-312 (April) 1932. Shannon, J. A.; Jolliffe, Norman, and Smith, H. W.: The Excretion of Urine in the Dog: VI. The Filtration and Secretion of Exogenous Creatinine, ibid. **102**: 534-550 (Dec.) 1932.

37. Wilks, Samuel, and Taylor, A. S.: Case in Which a Large Quantity of Nitrate of Potash Was Taken Medicinally: Elimination of the Salt by the Urine, Guy's Hosp. Rep. **9**: 173-179, 1863.

38. Barker, M. H.: Edema as Influenced by a Low Ratio of Sodium to Potassium Intake: Clinical Observations, J. A. M. A. **98**: 2193-2197 (June 18) 1932.

developed a peculiar toxic mental state and the question at that time was whether the therapy had produced this condition or whether it was one of the incidents seen in that disease when left untreated. This patient recovered from the acute toxemia and later went through a similar course of diuretic treatment. During this period the accumulated fluid was passed and the patient is alive and well today. Two interesting facts brought out by this form of treatment are (1) the frequent development of a temporary acidosis and (2) temporary renal insufficiency. A very important practical question is to know how far to proceed with the treatment in each individual patient.

DIVIDED DOSES OF TYPHOID VACCINE IN THE FEVER THERAPY OF NEUROSYPHILIS

J. R. DRIVER, M.D.
AND
HENRY C. SHAW, M.D.
CLEVELAND

It is no longer necessary to defend the principle of fever therapy in the treatment of neurosyphilis, for Wagner-Jauregg's malaria treatment of dementia paralytica has had universal acceptance, and its value in other forms of resistant neurosyphilis has been firmly established. Soon after its introduction, however, it was recognized that inoculation with malaria was attended by certain dangers and limitations which precluded its general application for all cases. Generally speaking, only robust persons without serious physical sequelae should be inoculated. Also, it is found that approximately 10 per cent of the patients inoculated have a partial or total immunity to malaria, making it necessary to adopt some other method of producing pyrexia. The difficulty of maintaining a suitable strain of tertian plasmodium, even in larger cities, is well recognized. For similar reasons, relapsing fever and sodoku have not fulfilled the requirements for a safe, efficient, easily available method of producing fever. Investigations, therefore, have continued in search of methods which would eliminate these objections.

The suggestion of Cowie and Calhoun,[1] of Barr, Du Bois and Cecil[2] and others, that the effect of malaria is due to the foreign protein nature of the paroxysm and not to a specific effect of the parasite itself, stimulated the trial of various foreign proteins in the fever treatment of neurosyphilis. Of these, typhoid vaccine has had by far the most extensive use. While it largely eliminates the objectionable features of malaria treatment and other disease-producing methods, the difficulty of producing high fever, comparable to those of malaria, consistently throughout a course of treatment, has been a serious drawback and has prevented a more general adoption of the method. In the past typhoid vaccine has been used largely for safety and convenience. Therapeutically, in the opinion of most investigators, it was inferior to malaria treatment.

The beneficial effects of fever therapy in neurosyphilis are roughly proportional to the height of the temperature obtained. Kirby[3] thinks that temperatures above 105 F. are necessary in order to obtain the maximum effect. Winslow, Miller and Noble[4] believe that a high temperature, artificially produced, 104 F. or higher, has a favorable influence on an established infection, while lower temperatures would seem to retard the formation of immune bodies. Thus, any procedure that would safely increase the fever-producing capacity of foreign proteins would probably also increase their therapeutic value. In order, throughout a course of treatment, to produce high temperatures by the intravenous injection of typhoid vaccine, it has been the usual custom to increase greatly the amount of each subsequent injection. Thus, doubling the previous dose is often resorted to, and amounts as high as from 2,000,000,000 to 4,000,000,000 organisms in a single injection have not uncommonly been reported. Even so, pyrexia comparable to that obtained by malaria has not been possible in all cases.

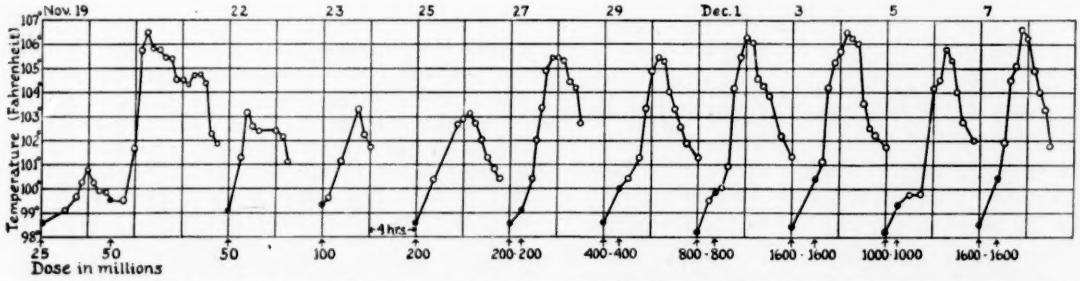

Chart 1.—Temperature reactions obtained in a patient treated by divided doses of typhoid vaccine given intravenously. The solid dots indicate the temperatures at the time each injection was made. Distinctly lower temperatures resulted from single doses in the second, third and fourth reactions.

In 1931, Nelson[5] reported on "An Improved Method of Protein Fever Therapy in Neurosyphilis," using combined typhoid vaccine. The technic consisted in giving two daily intravenous injections of the vaccine in the following manner:

> The first dose is given at any selected time and is of a size calculated to cause slight fever, the second is given during the height of the fever produced by the first—usually at the end of the second or third hour. The second dose seems to have the effect of "exploding" the charge supplied by the first and in this way relatively small doses are capable of producing fever apparently as high as desired—105, 106, 107° F.

Case records were submitted which clearly demonstrated the advantage of the double injection over the old single injection method.

Without knowledge of Nelson's report, the following experience resulted in our investigation of the

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Read before the Section on Dermatology and Syphilology at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 15, 1933.

1. Cowie, D. M., and Calhoun, Henrietta: Nonspecific Therapy in Arthritis and Infections, Arch. Int. Med. **23**: 69 (Jan.) 1919.
2. Barr, D. P.; Du Bois, E. F., and Cecil R. L.: Clinical Calorimetry: Temperature Regulation After Intravenous Injection of Proteose and Typhoid Vaccine, Arch. Int. Med. **29**: 608 (May) 1922.
3. Kirby, G. H.: State Hosp. Quart. **11**: 559-585 (Aug.) 1926.
4. Winslow, C. A.; Miller, J. A., and Noble, W. C.: Proc. Soc. Exper. Biol. & Med. **13**: 93, 1916.
5. Nelson, M. O.: Improved Method of Protein Fever Treatment in Neurosyphilis, Am. J. Syph. **15**: 185-189 (April) 1931.

divided dose technic of using typhoid vaccine in fever treatment:

CASE 1 (chart 1).—E. M., a Negro, aged 31, had a meningovascular type of neurosyphilis, and on Nov. 10, 1932, was inoculated with malaria. At the end of nine days no febrile reactions had occurred, and no malarial parasites were found on examination of blood smears. A dose of typhoid vaccine containing 25,000,000 organisms was given intravenously, followed by a rise in temperature to 100.8 F. at the end of four hours. At six hours it had fallen to 99.5 F., at which time a second dose of 50,000,000 organisms was given. This produced an additional rise, with a fastigium of 106.5 F, three hours later. This unusual reaction was interpreted at the time as being a malarial paroxysm precipitated by the injection of the foreign protein. However, in the following three days no further rise in temperature took place, and examination of blood smears again failed to reveal any plasmodia. It was then decided to continue fever therapy by the use of typhoid vaccine, as had been our custom in the past in many similar instances of natural immunity to malaria. A dose of 50,000,000 organisms was given on November 22, with a peak temperature of 103.1 F. On the following day, a dose of 100,000,000 organisms resulted in a rise in temperature to 103.3 F. Two days later, November 25, a dose of 200,000,000 organisms produced a temperature of 103.1 F. At this point the possibility of the unusual initial reaction being due to the divided dose was suggested. Therefore, on November 27, a dose of 200,000,000 organisms was given, causing an hour later a slight fever, the temperature being 99.1 F. Another dose of 200,000,000 organisms was then given, resulting in a peak temperature of 105.4 F. On November 29, a dose of 400,000,000 organisms was injected. At the end of one and a quarter hours a temperature of 100 F. had developed, and an additional dose of 400,000,000 organisms produced a rise in three hours to a peak of 105.4 F. Four additional reactions were given in a similar manner, resulting in temperatures of 105.8 F. or higher.

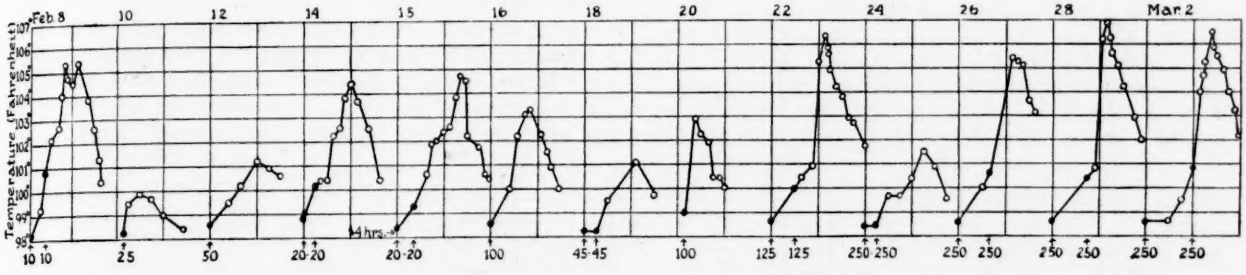

Chart 2.—Temperature chart of a patient treated by divided and single doses of typhoid vaccine intravenously. In the seventh and tenth reactions no rise in temperature had occurred when the second doses were given. The results are similar to the second, third and eighth reactions in which single doses were used.

This experience stimulated further study of the subject, and to date we have treated a total of twenty-one patients. Nineteen were suffering from various types of neurosyphilis, and two had resistant syphilis associated with interstitial keratitis and iritis.

TECHNIC

Fresh commercial typhoid vaccine is used, containing 1,000,000,000 organisms per cubic centimeter. To 1 cc. of the vaccine 9 cc. of physiologic solution of sodium chloride is added. One cubic centimeter of this mixture contains 100,000,000 killed organisms. The diluted vaccine is kept in an icebox and can be used throughout the course of treatment. Injections are given preferably with a tuberculin syringe to ensure accurate dosage. If a fresh vaccine is used, smaller doses are required. As a general rule, treatment is given on alternate days, although it can be given on successive days providing the temperature has returned to normal, the reactions are well sustained and there are no other contraindications. Temperatures are taken rectally every half hour until the temperature has risen to 104 F. and then every fifteen minutes until it falls to 104 F. again. Thereafter, the temperature is recorded hourly until normal.

It is advisable to avoid the use of antipyretics for relief of headache or other symptoms during the course of the treatment, as they may greatly diminish the fever reactions.

The first dose is given at any convenient time, preferably in the morning. Within from thirty minutes to two hours the patient usually experiences a chill lasting for a few minutes and followed by a rise in temperature. The second dose is then given after the rise is well established, i. e., 100 F. or higher. The interval between doses should be not less than two hours. It is found that an interval of from three to six hours is equally satisfactory, providing the temperature has not dropped to near normal by this time.

In many instances the fastigium lasts for only a few minutes, so that unless the temperatures are taken frequently the peak cannot be recorded.

A course of treatment may consist of any number of reactions —as many as from ten to sixteen have been given. Subsequent courses may be given with equally satisfactory results after an interval of weeks or months.

It should be remembered that there is a great individualism in the tolerance of patients to the injection of foreign proteins, and although it is believed that this factor is less marked with the divided dose method of using the vaccine, yet careful attention and bedside study are perhaps required in greater measure than in most therapeutic procedures.

REPORT OF CASES

The following case histories illustrate some of the factors which contribute to the success or failure of the method:

CASE 2 (chart 2).—J. T., a white man, aged 38, suffering from a well developed case of dementia paralytica received the treatment outlined in table 1. In this case, temperatures from 104.4 to 106.9 F. were obtained in all instances in which a rise in temperature had occurred before the second dose was given. When single doses were used, the temperature was much lower. When fever had not been produced by the time the second dose was given, the reactions were similar to those produced by single injections.

TABLE 1.—*Treatment Employed in Case 2*

	Date	Dose, Millions	Interval, Hours	Temperature, F.	Dose, Millions	Highest Temperature, F.
1	2/ 8/33	10	1½	100.8	10	105.4
2	2/10/33	25		Single dose		99.9
3	2/12/33	50		Single dose		101.3
4	2/14/33	20	1	100.2	20	104.4
5	2/15/33	20	1½	99.3	20	104.7
6	2/16/33	100		Single dose		103.3
7	2/18/33	45	1	98.2	45	101.1
8	2/20/33	100		Single dose		102.9
9	2/22/33	125	2	100.0	125	106.3
10	2/24/33	250	1	98.4	250	101.5
11	2/26/33	250	2½	100.6	250	105.4
12	2/28/33	250	3	100.4	250	106.9
13	3/ 2/33	250	4	100.8	250	106.5

CASE 3 (chart 3).—F. C., a white woman, aged 37, suffering from early dementia paralytica, received the course of treatment outlined in table 2. In this case, in each of the three reactions, the sixth, eighth and ninth, respectively, three doses

were used. In the sixth reaction the doses were spaced one-half hour apart, and there had been no production of fever when the third dose was given. The highest temperature, 102.9 F., was, therefore, relatively low. In the eigth and ninth reactions

TABLE 2.—*Treatment Employed in Case 3*

	Date	Dose, Millions	Interval, Hrs.	Temperature, F.	Dose, Millions	Interval, Hrs.	Temperature, F.	Dose, Millions	Highest Temperature, F.
1.	12/29/32	10	2	100.0	10	..	....	..	105.4
2.	12/31/32	10	1	100.4	10	..	....	..	104.0
3.	1/ 2/33	20	1	100.4	20	..	....	..	105.3
4.	1/ 4/33	20	1	98.6	20	..	....	..	104.0
5.	1/ 6/33	25	2½	101.1	25	..	....	..	105.8
6.	1/ 8/33	25	½	98.6	25	½	98.6	25	102.9
7.	1/10/33	35	2¼	101.7	35	..	....	..	105.3
8.	1/12/33	35	1½	98.6	35	1	99.3	35	105.1
9.	1/14/33	35	1	98.6	35	1½	101.3	35	104.9
10.	1/15/33	35	2	100.0	35	..	....	..	105.1

it will be noted that there had been no fever when the second doses were given, while at the time the third doses were administered a rise in temperature had taken place, the highest temperatures being 105.1 and 104.9 F., respectively. A total dosage of 595,000,000 killed bacteria for the course of ten reactions is much lower than is generally used by the single injection method.

CASE 4 (chart 4).—C. W., a white woman, suffering from tabes dorsalis with Charcot's joint of the right knee, was treated as outlined in table 3. In this patient, fever was present before each second injection. High temperatures comparable to those

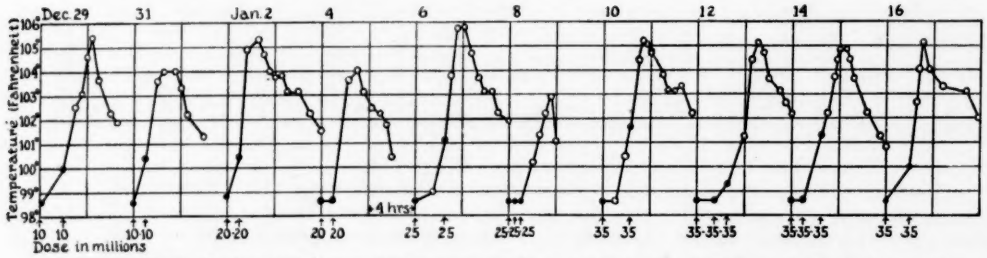

Chart 3.—Chart showing satisfactory temperature reactions obtained with divided small doses of typhoid vaccine. The importance of a rise in temperature before second doses are given is illustrated in the fourth and sixth reactions.

seen in malaria resulted from each reaction. The highest temperature recorded occurred in the tenth reaction following an interval between doses of three hours. A total dosage of only 350,000,000 organisms was used.

TABLE 3.—*Treatment Employed in Case 4*

Date	Dose, Millions	Interval, Hours	Temperature, F.	Dose, Millions	Highest Temperature, F.
1. 1/14/33	15	1¾	100.8	15	104.4
2. 1/17/33	15	1¾	100.4	15	104.9
3. 1/19/33	15	3	100.8	15	105.8
4. 1/25/33	15	2	99.9	15	106.0
5. 1/27/33	15	2	100.0	15	105.8
6. 1/29/33	20	2	100.8	20	105.3
7. 1/30/33	20	2	100.4	20	105.4
8. 2/ 1/33	20	2	99.7	20	105.6
9. 2/ 3/33	20	2	100.4	20	105.3
10. 2/ 5/33	20	3	99.7	20	106.5

COMPARISON OF SINGLE AND DIVIDED DOSE METHODS

Single Injection Method.—Using single injections of combined typhoid and paratyphoid vaccines, MacKenzie[6] treated thirty patients with dementia paralytica with the following results: "Temperatures up to 107° F. have been obtained, but a usual average is 103° F." Schlem,[7] treating patients with dementia paralytica, stated that: "The average maximum temperature obtained in all patients was 101.5° F." O'Leary[8] found it necessary to give 350,000,000 organisms on several occasions to produce a temperature of more than 101 F. Kemp and Stokes,[9] in a series of thirty cases of neurosyphilis, found that with comparatively low dosage the average temperature was 103.67 F., while with larger doses it was 104. F. Kunde, Hall and Gerty,[10] in cases of dementia paralytica, obtained temperatures varying from 102 to 104 F. with an average of 103 F. Robie[11] stated that he has never succeeded in getting a rise in temperature to over 104 F. in the patients with dementia paralytica whom he has treated. Goldsmith,[12] treating fifty-five patients with neurosyphilis, reported an average temperature of 103 F.

Divided Dose Method.—Nelson[5] stated that by his double injection method: "Fever apparently as high as desired — 105, 106 or 107° F. — may be produced by relatively small doses." Robinson and Johnson,[13] using Nelson's method, obtained temperatures from 104 to 106 F. Our experience corroborates that found by Nelson, and temperatures of 105 F. or higher have been the rule when the technic has been carefully followed. A rapidly developing immunity necessitating increasingly large subsequent doses is not so apparent in the divided dose technic; thus, smaller doses are required and often several satisfactory elevations of temperature can be secured without any increase in the dosage (chart 4).

COMMENT

Various technics have been developed in an effort to determine the proper number of divided doses, the size of the dose best suited and the optimal time interval between injections. From these studies it is believed that there is no particular advantage to be gained in giving more than two injections and that the amount of vaccine should be approximately the same for each dose. Increase in dosage is entirely dependent on the character of the previous reaction.

While it is entirely too soon to draw any final conclusions from the clinical results, yet the early improvement in our cases compares favorably with that seen following malaria treatment. No serious untoward effects were observed in any case. The reactions are tolerated unusually well without the marked prostration, anemia and loss of weight usually obtained with malaria treatment. It is especially useful in instances in which malaria treatment is considered too dangerous or in which a natural or partial immunity to malaria exists. It has the advantage of being always available and makes fever therapy possible for many patients to whom malaria therapy is not suitable.

6. MacKenzie, J. M.: Treatment of General Paralysis of Insane by Pyrotherapy, Brit. J. Ven. Dis. **5**: 95-101 (April) 1929.
7. Schlem, G. W.: U. S. Vet. Bur. Med. Bull. **6**: 544-548 (July) 1930.
8. O'Leary, P. A.: Treatment of Neurosyphilis by Malaria: Serologic Results and Comparison with Treatment by Typhoid Vaccine, J. A. M. A. **91**: 543-545 (Aug. 25) 1928.
9. Kemp, J. E., and Stokes, J. H.: Fever Induced by Bacterial Proteins in the Treatment of Syphilis: Observations in Sixty-Five Cases, J. A. M. A. **92**: 1737-1741 (May 25) 1929.
10. Kunde, Margaret M.; Hall, G. W., and Gerty, F. J.: General Paresis: The Effect of Nonspecific Protein Therapy on the Blood and Spinal Fluid, J. A. M. A. **89**: 1304-1307 (Oct. 15) 1927.
11. Robie, T. R.: In discussion on Kunde, Hall and Gerty.[10]
12. Goldsmith, H.: Non-Specific Protein Therapy in Neurosyphilis, Am. J. Psychiat. **9**: 501-517 (Nov.) 1929.
13. Robinson, G. W., Jr., and Johnson, P. A.: Hyperpyrexia in Treatment of Dementia Paralytica, J. Missouri State M. A. **29**: 121-125 (March) 1932.

Definite myocardial disease, active tuberculosis and marked debility or cachexia are absolute contraindications to fever therapy.

At present no one can offer a satisfactory explanation of the interesting phenomena produced by the divided dose technic of giving typhoid vaccine. Ecker[14] suggested that since the body has the property of promptly destroying or neutralizing some of the foreign protein after intravenous injection, this tendency may largely be satisfied by the first dose, permitting the second dose to cause an unusually intense reaction. Further studies along this line and on other phases of the subject in general have been planned.

SUMMARY

1. A series of nineteen patients with neurosyphilis and two with resistant syphilis associated with interstitial keratitis and iritis were treated with therapeutic fever, typhoid vaccine being administered intravenously, by the divided dose method, as described by Nelson.

2. Providing an initial rise in temperature has resulted from the first dose, the second dose produces an additional elevation with a fastigium usually comparable to that resulting from a malarial paroxysm.

3. The temperature of the patient should be taken before the second injection is made, and the vaccine should not be given unless a definite rise in temperature has occurred. The optimal interval between injections will vary between two and four hours.

4. The method is an excellent substitute for malaria treatment and brings satisfactory fever therapy within the reach of a still larger group of patients suffering from neurosyphilis.

5. Several courses of treatment can be given without the establishment of a permanent immunity, and chemotherapy can be combined with it if desired.

6. The higher temperatures made possible by this method clearly demonstrate the advantage to be gained over the older methods of producing fever by the injection of typhoid vaccine.

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ABSTRACT OF DISCUSSION

DR. PAUL A. O'LEARY, Rochester, Minn.: This report augments the reports that have been made on the value of nonspecific therapy other than malaria therapy in the treatment of syphilis and adds weight to the fact that the best therapeutic results occur in the group in which the higher temperatures are produced. In the series of cases I treated by typhoid vaccine and reported several years ago, the incidence of serologic reversal was considerably less than following malaria therapy. At that time I had not used the split dosage method, as originally described by Nelson. The debate is still going on as to the mechanism by which malaria therapy produces its therapeutic results. The proponents of the electrical temperature elevating contrivances lean to the fact that the heat per se is the factor, while others believe the reticulo-endothelial system or the individual's defense mechanism produces the satisfactory results. At the present time the evidence inclines toward the concept that heat produced within, or heat retained within the body, produces the successful therapeutic results. Nonspecific therapy is of value in the treatment of syphilis other than neurosyphilis. The authors mentioned the use of the split dosage method in the treatment of interstitial keratitis, and I likewise have found it of definite value in the treatment of keratitis in syphilitic children. The photophobia disappears within one-half the time that it does when specific measures are used alone. In my experience the results in the treatment of latent and Wassermann fast syphilis have been less encouraging to date. The great value that has been derived from these studies on nonspecific therapy is the fact that in selected cases satisfactory serologic and clinical results may be obtained when the arsphenamines, bismuth compounds and preparations of mercury have failed. Frequently the concurrent use of specific and nonspecific therapy augments, hastens and intensifies the results usually obtained by one or the other method when used alone.

DR. M. O. NELSON, Tulsa, Okla.: I am glad that some one else has tried this method, because my efforts to interest others in it have been rather unsuccessful. In fact, it was only with the persistent encouragement of Dr. Stokes that its development was carried to something like completion of technical detail, in spite of meager opportunity. The authors speak of "divided doses"; the term "double" or "coupled" doses seems a trifle more accurate. Certainly the effect produced is not merely a cumulative one. The two doses are timed and have a complementary and differing action, like the combination of powder and a lighted match. The authors say that the second dose will not raise the temperature if the first dose has not caused fever. My own experience has been that it is the timing that is important, for I have often seen very high temperatures following the second dose, even when the first dose had not caused any elevation of temperature at all. A little experience with the method may be necessary to secure maximum effectiveness, and it is important to follow technical details strictly. A partial list of these details appeared in the May, 1933, issue of the *Southern Medical Journal*. From the excellent results obtained I am convinced that this method of treatment is at least as effective as malaria, and in one case it accomplished what malaria had failed to do. While in some of the larger institutions malaria treatment may be found more convenient, the ready availability of the double injection method makes it seem likely that it could be made to replace malaria almost entirely in general use. It has the advantage of being applicable early in the course of resistant syphilis, before serious organic damage has occurred, and at the very time when such a method is capable of doing the most good.

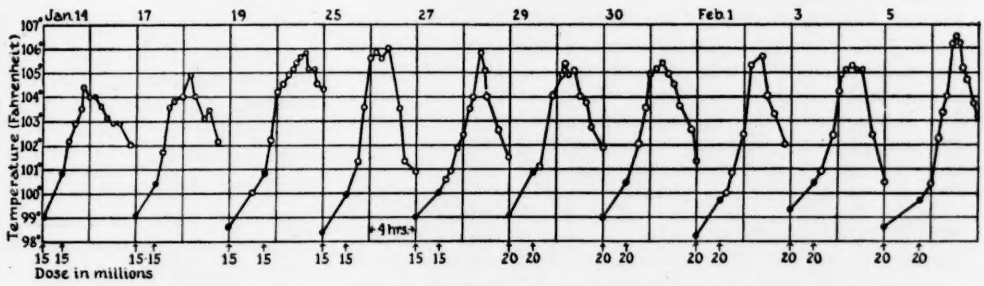

Chart 4.—Temperature reactions obtained in a patient given divided small doses of typhoid vaccine. Fever comparable to malaria resulted. A definite rise in temperature occurred before each second injection was made. Several satisfactory reactions were secured without the necessity of increasing the dosage.

DR. LOUIS A. BRUNSTING, Rochester, Minn.: It is generally conceded that the old technic of the use of typhoid vaccine by single injection even in enormous dosage produces reactions that are decidedly inferior to those of malaria. Following the original report by Nelson, I have used typhoid vaccine in broken doses as he specifies, especially in those patients who are resistant to inoculation by malaria or in whom the course is interrupted spontaneously after a few fever bouts, as is so often the case in the southern European patient. The method has the advantage over malaria, as with radiothermy or superdiathermy, that the individual paroxysms can be regulated and modified as to time and to severity, according to the condition of the patient. A certain amount of experience and conservatism is

14. Ecker, E. E.: Personal communication.

essential in the selection of proper cases and in the grading of dosage to provoke optimal reactions. Fevers of from 105 to 106 F. are not uncommon, and on one occasion a rise to 108 F. followed the administration of a double dose of 150 million organisms three hours apart. As a rule the febrile reactions by this method are more abrupt than with malaria but are of shorter duration, which can be demonstrated by using an electrical recording potentiometer with the rectal electrode in place for the duration of the paroxysm. There is a surprising individual variation among patients under fever therapy. As a rule it is well to avoid this method of therapy in those who present much involvement of the lower cord such as tabes with cord bladder or progressive ataxia, or those with acute syphilitic myelitis. Not infrequently such symptoms are aggravated by vigorous fever treatment. During the course of treatment, one of the most important laboratory aids in the recognition of toxemia is the level of the blood urea. Patients under malaria treatment sometimes show an alarming increase in the blood urea after four or five paroxysms, and in these the course is often stopped short of the desired number of fevers. It has been my experience recently that such a rise in the urea has been most marked when the loss of fluid by perspiration was greatest and especially in the summer months. I assumed that the elevation was merely a relative increase, due to concentration, and on this assumption proceeded to force fluids by mouth and by vein when necessary, to a total of 4 to 5 liters daily. The results have been quite satisfactory. In most instances the urea is reduced to its normal level, symptoms of dehydration disappear, and it is rarely necessary to stop treatment on this account short of the desired number of paroxysms.

DR. J. R. DRIVER, Cleveland: It is important to emphasize that the split dose technic of using typhoid vaccine in fever therapy may present some danger if, at the time the second dose is given, an unusually high temperature has resulted from the first injection. This can be illustrated by an example that came to my attention a few days ago. A patient suffering from chronic arthritis was given an initial dose of 25 million, which at the end of two hours had produced a temperature of 103.5 F. This high fever was accompanied by convulsions and unconsciousness lasting for four hours. Following the use of carbon dioxide inhalations, injections of epinephrine, soluble barbital and chloral hydrate, cold packs and a saline infusion, the temperature returned slowly to normal in ten hours. On the following day the patient felt perfectly well and his joint symptoms had disappeared. On the day this patient was treated the temperature of the room was approximately 95 F. and unusually humid. The symptoms were those usually seen in a heat stroke. While it is entirely possible that this patient was extremely sensitive to intravenous protein, it may be that the second injection precipitated a heat stroke as a result of the unusually hot day. As a general principle, in using this therapy, the second injection should not be given if a temperature of 103 F. or over resulted from the first dose.

Technic in Palpation.—The sensitiveness of hands and finger tips must be almost as variable as their character and shape. I believe we chiefly fail in palpation through lack of the art of "fine adjustment," to borrow a term from the microscope. It is scarcely ever necessary or useful to examine forcibly or roughly. Gross abnormalities we are only likely to miss if we are hasty or careless. But again it is the slighter abnormalities that are most valuable to us and our patients, and these are only to be detected by the cultivation of a technic which is at once gentle and searching. The texture and qualities of the skin and the hair, whether we are looking for myxedema or testing the lost luster in the locks of an ailing child, are assayed by the fingers as well as the eyes. The slight edema of the skin over an empyema or other deep suppuration is more worthy of discovery than the deep and obvious pitting of hydremic nephritis, and only the trained and expectant thumb and forefinger can do it. The tiny anal fissure, so often the cause of misleading and widely distributed pain and quite commonly missed, can be appreciated as well by the forefinger as by the speculum; the feel of the lesion reminds one of the roughness of the button hole in the lapel of one's coat.—Ryle, J. A.: The Training and Use of the Senses in Clinical Work, *Guy's Hosp. Gaz.* **47**:421 (Oct. 28) 1933.

GESTATIONAL POLYNEURITIS

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There have recently appeared several reports on gestational polyneuritis (neuronitis), emphasizing the clinical and pathologic aspects of this little known disease (Berkwitz and Lufkin,[1] Wilson and Garvey,[2] McGoogan,[3] Hoffman[4] and Strauss and McDonald[5]). Having seen twelve certain or probable cases within the past seven years, we are persuaded that the condition is not so rare as is generally thought and that a wider knowledge of the essential clinical picture will increase the frequency with which the diagnosis is made and will proportionately diminish the number of patients reported as succumbing to "late toxic vomiting of pregnancy." It is our purpose to discuss particularly the clinical observations in the light of the recorded cases and of our own experience.

ETIOLOGY

It has been commonly assumed that the disturbance is the direct result of the action of a toxin which is elaborated by the product of conception and which has an especial affinity for certain parts of the nervous system. No evidence is available to support this hypothesis, which, moreover, is rendered improbable by the fact that termination of the pregnancy frequently fails to arrest the progress of the disease. More recently, Berkwitz and Lufkin,[1] McGoogan,[3] Hoffman[4] and Strauss and McDonald[5] have called attention to the similarity of the nervous manifestations to those of beriberi and pellagra and have suggested that a deficiency of vitamin B (complex) may be responsible. The evidence supporting this position is not completely convincing, but the suggestion warrants serious consideration, since it offers a method of prophylactic and curative treatment not otherwise available.

PATHOLOGY

Visceral lesions are usually confined to mild degenerative changes in the various organs—kidney, heart, liver, suprarenals and the like. Grossly, the brain, spinal cord and peripheral nerves usually appear normal, although petechial hemorrhages may be detected, especially in the cerebrum and the meninges. Microscopically, the peripheral nerves show degenerative changes, while in the spinal cord, particularly in the anterior horn cells, there may be swelling of the cells with loss of the Nissl substance and occasionally a definite necrosis. Cerebral lesions are usually limited to petechiae. The involved muscles show marked degenerative changes.

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Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 15, 1933.

1. Berkwitz, N. J., and Lufkin, N. H.: Toxic Neuronitis of Pregnancy, Surg., Gynec. & Obst. **54**: 743-757 (May) 1932.
2. Wilson, K. M., and Garvey, Paul: Polyneuritis Gravidarum; a "Presumable" Toxemia of Pregnancy, Am. J. Obst. & Gynec. **23**: 775-787 (June) 1932.
3. McGoogan, L. S.: Toxic Neuronitis in Pregnancy, Journal-Lancet **52**: 735-740 (Dec. 15) 1932.
4. Hoffman, L. O.: Presumable Toxemias, Nebraska State M. J. **17**: 422-424 (Oct.) 1932.
5. Strauss, M. B., and McDonald, W. J.: Polyneuritis of Pregnancy; a Dietary Deficiency Disorder, J. A. M. A. **100**: 1320-1323 (April 29) 1933.

INCIDENCE

No estimate of the frequency of polyneuritis can be offered, although it is undoubtedly less rare than is commonly thought. Many cases of so-called late toxic vomiting of pregnancy should be placed in this category, as can be demonstrated by a careful survey of the reports in the literature. In other instances there may be a suspicion of "hysteria" because of the character of the subjective complaints and the almost complete absence of evidence of visceral disease. In any doubtful case, careful neurologic examination is demanded, since it is only in this way that polyneuritis can be diagnosed.

OCCURRENCE

The disease occurs more commonly in those pregnant for the first or second time, although women with a greater number of previous gestations are not exempt. There is no age relationship; the majority of cases occur between the ages of 20 and 35 years, when childbearing is more common. Patients who have previously exhibited evidences of mental instability may be more susceptible.

ONSET

Gestational polyneuritis, of the type under consideration, almost invariably develops late in the course of, or following, an attack of hyperemesis gravidarum, making its appearance from twelve to twenty weeks after conception. It differs in this respect from those forms of isolated nerve involvement which may develop at any time during pregnancy or after delivery, without relation to nausea and vomiting.

SIGNS AND SYMPTOMS

There is a tendency to regard the early evidences of the neuritis merely as recurrences of a neurosis, since in many instances the patients who develop the condition have suffered earlier in their pregnancies from hyperemesis gravidarum, which has responded to simple treatment and which has therefore been viewed as "neurotic" in character. This is particularly true of the subjective complaints, such as the generalized weakness, the hyperesthesias and the tachycardia, which are so frequent in functional nervous disorders.

Chief Symptoms and Signs on Which the Diagnosis Depends.—General weakness usually first appears in the lower extremities and may be limited to them. Ordinarily, the extensor muscles are more involved than the flexors, although the distribution is not uniform. The ankles and wrists may be less affected than the knees and elbows, or the paralysis may be more clearly of the ascending type. With the increasing weakness there is evident atrophy of the muscles, which become soft and flabby.

Hyperesthesia in the affected parts is extremely variable. Occasionally the skin is hypersensitive, but more commonly increased tenderness is elicited only by pressure deep into the muscles or over the nerve trunks. Placing the nerves on tension, as by forceful flexion at the ankles or raising the straight leg on the abdomen, produces exquisite pain.

Tachycardia is almost uniformly present and may be among the earliest changes to attract attention. The cardiac rate is not altered by physiologic doses of atropine, a fact that suggests actual involvement of the vagus. Electrocardiograms give no evidence of abnormal cardiac action other than the increased heart rate.

Absence of the tendon reflexes in the affected extremities points to involvement of the lower neurons. As a rule, the knee jerks and achilles reflexes are lost first, while the biceps and triceps jerks may be merely weakened or may disappear relatively late in the disease. Plantar stimulation and tibial pressure may evoke no response or one that cannot be easily interpreted.

Korsakoff's psychosis, with loss of recent memory, disorientation as to time and place, and a tendency toward confabulation, denotes cerebral involvement. It may appear late and, in mild cases, may disappear within a week or two. On the other hand, it usually persists for some months and may be permanent, particularly as regards the loss of recent memory.

Less Characteristic and More Variable Conditions.—Ocular nystagmus, lateral and vertical, ocular squint, more commonly divergent, and diplopia may result from involvement of the oculomotor muscles.

Optic neuritis may be indicated by indistinct, raised disk margins and slightly enlarged veins and may result in dimness of vision. On the other hand, ophthalmoscopic examinations may be negative and yet the dimness of vision may be attributable to an optic neuritis.

Retinal hemorrhages of the "flame" variety have been rather commonly reported.

Exophthalmos has been recorded but is rare.

Central deafness is occasionally evident. There is good evidence that the actual auditory apparatus is adequate, as shown by the prompt turning of the head in the direction of an unusual sound, but that the receptivity of the cerebrum is disturbed, so that response to questions is greatly delayed. In other instances there is evidence of nerve deafness, pointing to involvement of the auditory nerve. Auditory hallucinations have also been observed.

Delirium or drowsiness may develop in association with the psychosis, or quite independent of the mental alterations characteristic of the Korsakoff syndrome.

Choreiform movements of the head and face have been observed but are uncommon.

Dysphagia may result from paralysis of the muscles of deglutition; dysphonia, from involvement of the laryngeal and pharyngeal apparatus, while dyspnea may be due to paralysis of the diaphragm or the intercostals.

Pain in the involved extremities, independent of motion or pressure, is rarely prominent but may occasionally demand attention.

Loss of positional sense is usually present as a manifestation of the ataxia of the extremities.

Involuntary urination and defecation have been noted rather frequently but appear more commonly late in the disease. In other instances there may be difficulty in urinating, and catheterization may be necessary.

Jaundice has been described but is not common. Even in the patients who become icteric there is usually no marked necrosis of the hepatic cells.

Numbness is occasionally a prominent symptom, even when there are no other evidences of sensory disturbance.

Paralysis of the diaphragm may be present, as suggested by a costal type of respiration, with the abdomen sinking with each inspiration or as shown by fluoroscopic examination. There may be an associated partial atelectasis of the lungs.

Laboratory Examinations.—These do not generally give useful information, although variations from normal may be noted at times. The urine is usually

normal but may show albumin and casts, especially when dehydration is pronounced. The blood commonly shows a moderate hypochromic anemia and occasionally a slight leukocytosis. Blood chemical studies ordinarily reveal no alteration from normal, but in rare instances there may be evidence of a moderate nitrogen retention. The carbon dioxide combining power is normal or slightly increased, and the hydrogen ion concentration tends to approach the upper limit of normal. The spinal fluid is under normal tension and shows no abnormal elements. There may be absence of free hydrochloric acid in the gastric contents. The blood and spinal fluid Wassermann reactions are commonly negative. Temperature elevations are uncommon except in the presence of an intercurrent infection or as a terminal event. Blood pressure readings are usually normal.

PROGNOSIS

In the forty-eight cases gathered from the literature by Berkwitz and Lufkin there were nine deaths—a mortality of 18 per cent. However, in the recent reports from this country the death rate was much greater, possibly because the condition was recognized more definitely in patients who succumbed early.

Percentage of Fatal Cases in Recent Literature

Author	Number of Cases	Deaths	Per Cent Fatal
Berkwitz and Lufkin [1]	4	3	75
Strauss and McDonald [5]	3	0	0
McGoogan [3]	5	4	80
Hoffman [4]	1	1	100
Wilson and Garvey [2]	3	3	100
Plass and Mengert	12	8	67
Total	28	19	68

When recovery does occur, it is usually slow but reasonably complete. Occasionally, however, the nerve changes are too extensive and the patient never regains the use of the involved extremities. In the four patients whom we have seen survive, a marked and rapid increase in weight was a prominent part of the convalescence. Patients who survive more than two weeks after the diagnosis can be made on physical examination have a relatively good chance of complete recovery. In fulminating cases, death may ensue within three or four days of the first symptom. Death is occasionally due to intercurrent disease but usually occurs because of complete paralysis of respiration or of swallowing.

TREATMENT

On the basis of the hypothesis that the disease results from a deficiency of vitamin B, intelligent prophylaxis would demand attention to securing an adequate consumption of this accessory food factor during and after hyperemesis gravidarum. With the recent tendency to force a high carbohydrate diet on patients with vomiting of pregnancy, there would seem to be an increased risk of producing vitamin deficiencies, unless special care is paid to the inclusion of foods rich in these factors.

Curative treatment is generally ineffective, unless one is impressed by the results of vitamin B feedings in the three patients of Strauss and McDonald. It would appear that their cases were mild in character, but the record of 100 per cent recoveries is impressive.

Emptying the uterus, as soon as a definite diagnosis is made, has not been so effective as to make it the treatment of choice, although the association of the condition with pregnancy in an apparent cause-and-effect relationship presents a strong argument for therapeutic abortion. The fact that, in certain instances, the disease appears or becomes aggravated after the uterus has been emptied, or after the fetus has died, speaks against a toxic etiology and against too great reliance on termination of pregnancy as a therapeutic aid.

The possibility that the disease may appear in an aggravated form in a subsequent pregnancy constitutes sufficient reason for recommending contraception or sterilization for those patients who may recover.

The diet should be nutritious as well as vitamin containing. A plentiful intake of fluids should be assured, by mouth if vomiting is not frequent but by other routes if oral feedings are not well tolerated. Dehydration may be present and must be combated.

Heat and salicylates are most useful for the control of pain. The infra-red lamp, the heat cradle and the electric pad are helpful. Opiates should be used cautiously because of the chronic nature of the disorder.

Massage and electrotherapy are valuable adjuncts to the later treatment when reestablishment of function is particularly sought.

Orthopedic appliances are useful to combat the tendency of the involved extremities to develop contractures.

SUMMARY

Gestational polyneuritis commonly follows or develops concurrently with hyperemesis gravidarum. There is a tendency to explain the symptoms on the basis of hysteria unless a neurologic examination is made, since there are usually no evidences of visceral disease. The cardinal observations include: (1) general weakness, more marked in the legs and in the extensor muscles; (2) sensory disturbances; (3) tachycardia, for which no organic explanation can be elicited; (4) marked diminution or absence of the various tendon reflexes, and (5) a psychosis of the Korsakoff type.

The etiology is unknown, but the disease is variously explained as due to (1) a toxin developed by the conceptus or (2) a deficiency in vitamin B intake.

Pathologic changes in the viscera are scarcely significant, but degenerative changes in the peripheral nerves and spinal cord and petechial hemorrhages in the cerebrum offer an explanation for the neurologic manifestations.

The prognosis is poor. If the patient survives the first two weeks, slow recovery usually ensues, but it may never be complete.

Treatment is empirical and none too successful. Prophylaxis on the basis of high vitamin feeding offers the best hope for improving treatment. Therapeutic abortion is well advised but the results are frequently disappointing.

ABSTRACT OF DISCUSSION

DR. RALPH H. LUIKART, Omaha: Cowgill of Yale demonstrated the lack of foundation for the hypothesis that polyneuritis is caused by a toxin. He has shown that, if the disturbance is not too advanced, relief can be procured by stabilizing the vitamin balance, particularly the vitamin B complex. This includes the antineuritic part of this vitamin, which formerly was called vitamin G. A patient with severe vomiting in pregnancy developed symptoms almost identical to beriberi, Korsakoff's syndrome and pellagra. Forced feeding of the vitamin B complex was instituted, and because of the results, the case was reported at the obstetric meeting at Memphis last

October. The paper by Straus and McDonald, referred to by the authors, emphasized the important fact that there is a decrease and often a lack of free hydrochloric acid in the gastric juice of pregnant women. In all these conditions there is a history of vomiting, diarrhea, loss of appetite, emaciation or some hepatic disturbance. It is well known that avitaminosis causes a loss of appetite, which in turn prevents ingestion of vitamins, thus establishing a vicious circle. In these various disturbances evidenced by polyneuritis, the etiology simmers itself down to a failure on the part of the individual to digest, assimilate or metabolize the needed vitamins to maintain a proper vitamin balance.

DR. J. H. SURE, Milwaukee: I want to call attention to a condition not quite so severe as polyneuritis, a form of toxemia that occurs in the latter months of pregnancy and is associated with pain and tingling in the extremities, which will not allow the patient to sleep. In former years it was my practice to use salicylates and barbiturates and even narcotics, but with no relief. Now, however, I have learned that these symptoms are caused by calcium deficiencies. It required at least 120 to 150 grains of calcium lactate daily to get relief from pain, and whenever the dose was cut down the pain recurred.

DR. RAE T. LAVAKE, Minneapolis: I should like to ask the authors whether they have arrived at any definite conclusions as to how long one can subject these patients to nonoperative treatment of any type and feel that they are safe. Four such cases have come under my observation and in each instance, from an examination of their charts, I would have terminated the pregnancy from indications of pulse and mental condition weeks before the neuritis developed. Gestational polyneuritis, to my mind, represents one of the possible terminal stages of early toxemia of pregnancy. If pregnancy is not terminated early, I feel that 60 per cent is possibly a low mortality rate.

DR. F. H. FALLS, Chicago: During the five years that I was at the University of Iowa I saw more of these cases than I have seen before or since. I also noted the rapidity in pulse and the similarity between the symptoms these patients manifest and those of a thyrotoxicosis. Since coming back to Chicago I have been interested in the question of hyperemesis gravidarum and thyrotoxicosis and have taken a large number of basal rates in patients suffering from hyperemesis gravidarum. The basal rate is nearly always high, not plus 10 or plus 20 but as high as plus 60 or 70; in two cases it was 111 and 109. A large percentage of them will recover from hyperemesis gravidarum, and the polyneuritis will improve if they are given compound solution of iodine. There is no question that a woman with hyperemesis gravidarum is suffering from an avitaminosis, but there are other things besides, and the polyneuritis may well be a combination of the toxemia with the thyrotoxicosis superimposed on an avitaminosis. I agree with Dr. LaVake in that when I see severe or even beginning evidence of polyneuritis and a rising pulse up to 120 I consider seriously the emptying of the uterus. On the other hand, I never have emptied the uterus unless I have proved to my own satisfaction that I cannot control conditions by the use of thirty drops of compound solution of iodine a day. With this treatment I have been able to carry along practically all patients without emptying the uterus except in those entering the clinic in a dying condition.

DR. F. J. SCHATZ, St. Cloud, Minn.: I wish to report a case that I saw in 1923 in a secundipara aged 28, in order to bring out a point not mentioned by Drs. Plass and Mengert. The first pregnancy was normal. In her second pregnancy, at six months she developed weakness of the lower extremities, severe pain and gradual paralysis. There were no complications above the waistline. She went on to full term and delivered normally. A subsequent pregnancy two years later was normal with an easy delivery. She is still alive, in good health, but with complete paralysis of the lower extremities.

DR. E. D. PLASS, Iowa City: I am grateful to Dr. Luikart for having emphasized the possibility of polyneuritis being an avitaminosis. Dr. Sure intimated that the pain in polyneuritis could be controlled by calcium therapy. My experience in one case would indicate that calcium is not so effective as in other neuritic pains in the extremities. I am not sure when the pregnancy should be ended. Most of my patients have come after mental symptoms were well developed, actually being admitted because of a psychosis. Certainly, at that stage of the disease, emptying of the uterus is not an effective therapeutic procedure. In one case the uterus was emptied within a week after the tachycardia had appeared and the therapeutic abortion apparently had a good effect; in other cases it has not been so effective. There is such wide variation in the time of appearance of mental disturbances that the development of a psychosis is not an adequate indication for abortion. In the case presented, mental symptoms were first noted three weeks after the uterus was emptied. I would emphasize again that prophylaxis is infinitely better than the cure, and, on the avitaminosis hypothesis, it should be possible to provide protection by adequate vitamin feeding during and after the hyperemesis. In answer to Dr. Falls, I may say that in one or two cases the basal metabolic rates were not excessively high, no higher than one would expect in a normal pregnancy. I am glad that Dr. Schatz brought out the possibility that the paralysis may be permanent. I would also emphasize that some of the mental symptoms may be permanent. I have had one patient under observation for about eighteen months who still has loss of recent memory. She can recall distant events perfectly well but cannot remember what happened yesterday or last week. The possible permanence of some of the nervous manifestations must be kept in mind in any case of gestational polyneuritis.

THE BLADDER POST PARTUM

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For several years, we have followed a definite routine when caring for the urinary bladder post partum. This paper is concerned with an outline of this care, and a review of obstetric conditions that may influence the behavior of the bladder during the puerperium.

Our care of the urinary bladder post partum is based on the principles that overdistention of the bladder, and the presence of residual urine, favor infection of the urinary tract. We recognize a small group of women who are unable to void spontaneously post partum, apparently from no demonstrable cause. Nervous inhibition, posture and decreased intra-abdominal pressure may explain this. In caring for these patients, as well as all others, an attempt is made to cause spontaneous urination by such means as warm external "pitcher douches." However, these are not persisted in to the point of exhausting the patient. We believe that too great value may be placed on spontaneous urination during the puerperium through fear that catheterization will cause infection of the urinary tract. It has been shown by Cabot [1] that infection rarely, if ever, is caused by aseptic drainage by catheter in itself but that previous overdistention and the persistent presence of residual urine are etiologic factors. The observations of Mengert and Lee [2] and others have demonstrated the presence of dilated, atonic ureters during pregnancy. This condition persists for a time post partum and would seem to make desirable avoidance of distention and residual urine.

In our experience, it has been necessary to drain, by catheter, the bladders of approximately 15 per cent of

From the Section on Obstetrics and Gynecology, the Mayo Clinic.
Read before the Section on Urology at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 16, 1933.

1. Cabot, Hugh: Personal communication to the authors.
2. Mengert, W. F., and Lee, H. P.: Urinary Tract Changes During Late Pregnancy and Early Puerperium, Am. J. Obst. & Gynec. **24**: 205-214 (Aug.) 1932.

is made, has not been so effective as to make it the the case was reported at the obstetric meeting at Memphis last

puerperal women. Our patients are usually catheterized on the delivery table and so return to their rooms with the bladder empty. The average parturient woman is not dehydrated, but she is encouraged to take fluids as soon as any nausea that may have been incident to the anesthesia has disappeared. The majority of puerperal women have normal renal function; hence the secretion of urine should not be materially altered.

It would seem, therefore, that the decision whether the catheter is to be used should depend on the inability of the patient to void in the presence of a desire to do so or on evidence of a full bladder being gained by abdominal palpation. Not infrequently evidence of a full bladder will be elicited without the woman being conscious of a desire to void. However, if the patient does not void within eight to twelve hours post partum the catheter is used, as a rule. Subsequently she is given an opportunity to void spontaneously, but if she is unable to do so the catheter is inserted at intervals of eight hours. Following the first spontaneous urination she is again catheterized to learn if any residual urine is present. The average patient with retention is able to empty the bladder completely and spontaneously by the third day post partum

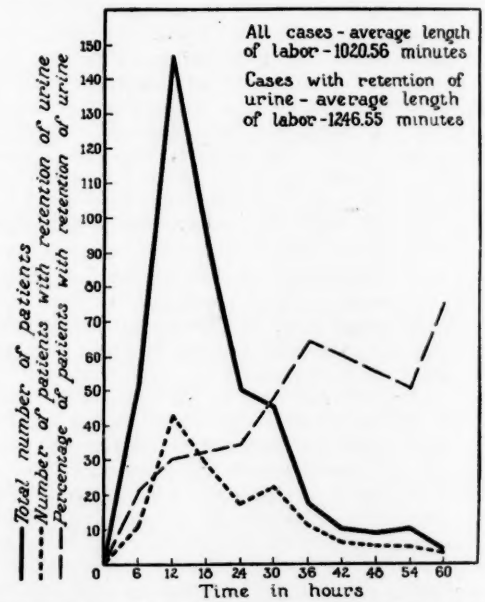
Those patients who begin to void spontaneously, but frequently and in small amount, are catheterized after one of their voidings, and not infrequently residual urine is found. These women are then catheterized after each urination until the quantity of residual urine is less than 50 cc. A few cubic centimeters of solution of silver nitrate, 1 per cent, is instilled through the catheter after each drainage for the antiseptic and stimulatory effect.

The regimen outlined in the preceding paragraphs has been in force for eight years, with no untoward results.

Nine hundred and eighty-four patients were studied post partum to determine, if possible, the cause of retention of urine in the puerperium. The selection was made solely on the basis of ability or inability of the patient to empty the bladder spontaneously. Patients who were able to void spontaneously numbered 776; those who had retention necessitating catheterization numbered 208. Of the patients who could urinate spontaneously, 63 per cent were multiparas and 37 per cent primiparas; of those who were catheterized, 26 per cent were multiparas and 74 per cent primiparas.

The pelvic measurements were recorded to determine the incidence of deviation from normal in the two groups. Of the 776 women who were able to void spontaneously post partum, 90.52 per cent had normal measurements. The remaining 9.48 per cent had pelvic contraction, classified as follows: unspecified contraction, 1.1 per cent; flat pelvis, 1.0 per cent; generally contracted pelvis, 2.5 per cent; funnel pelvis, 0.28 per cent, and contraction of the pelvic outlet, 4.6 per cent. Of the 208 women who had retention of urine post partum, 79.49 per cent had normal pelvic measurements. The remaining 21.51 per cent had pelvic contraction, classified as follows: unspecified contraction, 3 per cent; flat pelvis, 2.7 per cent; generally contracted pelvis, 1.2 per cent; funnel pelvis, 0.61 per cent, and contraction of the outlet, 14 per cent. There is no significant difference in the proportion of the various pelvic abnormalities except in contraction of the outlet. This condition is naturally associated with a considerable proportion of cases in which there is trauma to the soft tissues of the perineum and in which episiotomy and low forceps deliveries are necessary.

The frequency of certain factors that might be associated with increased trauma to the maternal soft tissues was studied. The 776 cases in which urination was spontaneous post partum were studied first. In forty cases (5.2 per cent) manual rotation from the occipitoposterior position to the occipito-anterior position was carried out; in seven cases (0.9 per cent) the same change in position was effected by means of forceps. There were seventy-one cases (9.2 per cent) in which the occiput rotated spontaneously from posterior to anterior. In ten cases (1.3 per cent) the cervix was dilated manually, and in four cases (0.5 per cent) the cervix was incised because it failed to dilate. Sixty patients (7.7 per cent) had dry labors. Episiotomy was performed in 326 cases (42 per cent). Next, the 208 cases in which catheterization was necessary were studied. In seventeen cases (8.1 per cent) manual rotation from the occipitoposterior to the occipito-anterior position was effected. There were four cases (1.9 per cent) in which the same change in position was brought



The percentage of patients who are unable to empty the bladder spontaneously increases progressively with the length of labor.

about by means of forceps, and eleven cases (5.2 per cent) in which it took place spontaneously. Manual dilatation was performed in six cases (2.9 per cent) and incision of the cervix in two cases (0.96 per cent). Dry labor occurred in nineteen cases (9.1 per cent). Episiotomy, with repair, was performed in 150 cases (75 per cent).

It would seem that occipitoposterior presentation, whether rotation is spontaneous or whether manipulation is necessary to correct it, has little to do with subsequent retention of urine except as it affects the length of labor. Likewise, conditions that may be associated with increased trauma to the cervix, such as manual dilation of the cervix, Dührssen's incision of the cervix, and loss of the bag of waters before dilatation begins, seem to have no bearing on the subsequent ability of the patient to void. Trauma of the pelvic floor and vulva, associated with episiotomy, apparently increases the chances of retention of urine post partum.

The numbers of various operative deliveries through the vagina were as follows: Among the cases in which urination was spontaneous, low forceps was used in 144 cases (19 per cent), midforceps in thirty-one cases

(4 per cent), and high forceps in two cases (0.25 per cent); in four cases (0.5 per cent) the after-coming head required operative delivery, and version and extraction were performed also in four cases (0.5 per cent). The total incidence of operative delivery was 24 per cent. Among the cases in which catheterization was necessary, low forceps was employed in seventy-seven cases (37 per cent), midforceps in eighteen cases (8.6 per cent), and high forceps in one case (0.48 per cent). There were fourteen cases (6.7 per cent) in which it was necessary to use forceps on the after-coming head, and two cases (0.96 per cent) in which version and extraction were performed. The total incidence of operative delivery was 53.74 per cent. Of the patients who required catheterization, 74 per cent were primiparas; hence the higher incidence of operative delivery. Naturally, among primiparas who underwent operative delivery, the labors were longer and the proportion of cases in which episiotomy was performed was high (92 per cent). The factors of fatigue and of reaction to analgesia and anesthesia perhaps played a part in urinary retention in this group of cases.

Position and presentation of the infant were virtually of the same distribution in the two groups, except that among the cases in which urination was spontaneous the incidence of breech presentation was 2.2 per cent and, among the cases in which catheterization was necessary, 8.1 per cent. It may be that the more rapid passage of the after-coming head through the birth canal is a factor in causing retention, but the incidence of episiotomy in breech deliveries is high and this factor may be the more prominent contributory cause.

Labor had been induced for various reasons in 30 per cent of the cases in which catheterization was necessary and in 19 per cent of the cases in which urination was spontaneous. The methods of induction of labor bore no relation to the subsequent behavior of the bladder.

SUMMARY AND CONCLUSIONS

The percentage of patients who cannot urinate spontaneously increases as the length of labor increases. This suggests that fatigue is a factor. In addition, those patients who go through prolonged labor, as a rule, have had more analgesia during labor and more anesthesia during delivery than those whose labor is of shorter duration; these factors may affect the ability to void.

As compared with the patients who could urinate spontaneously post partum, the incidence of pelvic contraction was found to be twice as great among patients with retention post partum. Contraction of the pelvic outlet was the most common form of pelvic contraction; naturally the percentage of episiotomy and forceps delivery was high in this group of cases.

Factors thought to be associated with increased trauma to the vaginal wall and cervix, such as spontaneous rotation in cases of occipitoposterior position, operative correction of errors of rotation, manual dilation of the cervix, incision of the cervix, and premature rupture of the bag of waters, did not materially influence the frequency of retention of urine. Injury to the bladder or urethra did not occur in any case.

Operative delivery through the vagina had been performed in 53 per cent of the cases in which catheterization was necessary and in 25 per cent of the cases in which voiding was spontaneous. Of the women who underwent operative vaginal delivery, 76 per cent were primiparas; 70 per cent of the operations were deliveries by low forceps.

Episiotomy with repair had been performed in 72 per cent of the cases in which catheterization was necessary and in 42 per cent of the cases in which voiding was spontaneous. Ninety-two per cent of the primiparas and 76 per cent of the multiparas who underwent operative delivery also had episiotomy. Eighty-four per cent of the operations were accompanied by episiotomy.

It would appear, therefore, that primiparity associated with episiotomy and repair is most frequently followed by urinary retention. Prolonged labor, delivery by forceps and contraction of the pelvic outlet exist as contributory causes. While this regimen of care of the bladder post partum has been carried out, 3,500 women have been confined with no untoward effect on the urinary tract. We believe, therefore, that avoidance of overdistention and residual urine must in part account for the freedom from infection of the urinary tract among patients who are catheterized post partum. Further, it would seem that the act of catheterization, properly performed, before overdistention occurs and residual urine appears, is a safe procedure.

DILATATION OF THE KIDNEY PELVIS AND URETER DURING PREGNANCY AND THE PUERPERIUM

A PYELOGRAPHIC STUDY IN NORMAL WOMEN

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AND
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In 1925 we [1] reported our observations on dilatation of the ureter and kidney pelvis during pregnancy in a group of cases studied by retrograde pyelography. The cases were divided into three groups:

In group 1 were eleven cases of acute pyelitis during pregnancy. In every case either bilateral or unilateral dilatation was found of from marked to enormous degree.

Group 2 consisted of nineteen cases of normal pregnancy with normal urine. In sixteen of these cases, or 84.16 per cent, either unilateral or bilateral dilatation was found.

In group 3 were six patients who gave a history of a pyelitis either before marriage or during a previous pregnancy but who were normal at the time of the investigation. Bilateral dilatation was found in two cases, unilateral in three cases and no dilatation in one case. The conclusion was reached that varying degrees of dilatation occur in approximately 80 per cent of cases of normal pregnancy.

Seng [2] studied a series of seventy-eight normal pregnant women by retrograde pyelography and found that 100 per cent showed dilatation of the right ureter and 94.5 per cent showed right hydronephrosis, while the left ureter showed dilatation in 66 per cent of primiparas and 77 per cent of multiparas, and left hydronephrosis in 46 per cent of primiparas and 66 per cent of multiparas.

From the Presbyterian Hospital and the A. D. Thomson Urological Fund of Rush Medical College of the University of Chicago.

Read before the Section on Urology at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 16, 1933.

1. Kretschmer, H. L., and Heaney, N. S.: Dilatation of the Ureter and Kidney Pelvis During Pregnancy, J. A. M. A. **85:** 406-409 (Aug. 8) 1925.
2. Seng, M. I.: J. Urol. **21:** 475 (April) 1929.

Schumacher [3] studied 100 pregnancies by intravenous pyelography. He found that dilatation of the lumbar ureter occurred in 100 per cent of cases after the fifth month and increased with the duration of pregnancy, and that bilateral dilatation of the lumbar ureter occurred in 83 per cent of cases. He found dilatation of the pelvic ureter in only two cases. He found twisting of the upper third of the ureter in 80 per cent of the cases and attributed the conditions to obstruction.

Fig. 1.—Moderate dilatation of the right kidney pelvis and slight clubbing of the calices in Mrs. S. at fourth month of pregnancy.

Cornell and Warfield [4] in a similar study found dilatation of the right ureter in every case examined, beginning as early as the fifth month.

In order to verify our previous observations and conclusions, we undertook to study another series of cases by intravenous pyelography, expecting that we might find in this series fewer dilatations, since we suspected that possibly overdistention of the ureter and kidney pelvis by the retrograde method might have increased the percentage of dilatations in our first study.

For this investigation we selected only such women as gave normal previous kidney and bladder histories and who were normal as to urinary examinations and obstetric conditions at the time the study of each case was begun. We not only wished to determine how commonly dilatation of the kidney pelvis and ureter occurs during pregnancy but were curious regarding several other questions; namely, How early on the average does the dilatation begin and does it always increase as pregnancy lengthens? Does the dilatation, when present, start to disappear immediately after delivery, and how long after delivery does it require for the normal conditions to return? With these questions in mind, we decided to assume the study of only such cases as we could probably follow throughout pregnancy and the puerperium, expecting to make examinations first between the second and fifth months, then during the seventh or eighth month or just before delivery, then between the eighth and fourteenth days post partum, again six weeks after delivery, and finally about three or four months post partum, should the last previous examination not already be normal.

Neoskiodan was the drug selected for this study.[5] Twenty cubic centimeters was injected into the cubital vein and the first films were made ten minutes after the injection, and the second films taken from twenty to forty minutes after the first films were made. Only one patient showed any idiosyncrasy for the drug. She vomited each time after the injection but had no febrile reaction.

In all, the study of fifty-nine cases was begun. Five of these were discarded after the first intravenous pyelogram was made, because the urine examined bacteriologically was found to show a few colon bacilli and the sediment to show a few leukocytes, leaving a series of fifty-four normal cases for further study on whom intravenous pyelograms were made between the second and fifth months. Ten of these patients failed to return, so that forty-four patients were studied between the sixth and eighth months. Some of these patients have not yet been delivered while others have been delivered so recently that their complete study has not been finished. There are, however, thirty-one cases

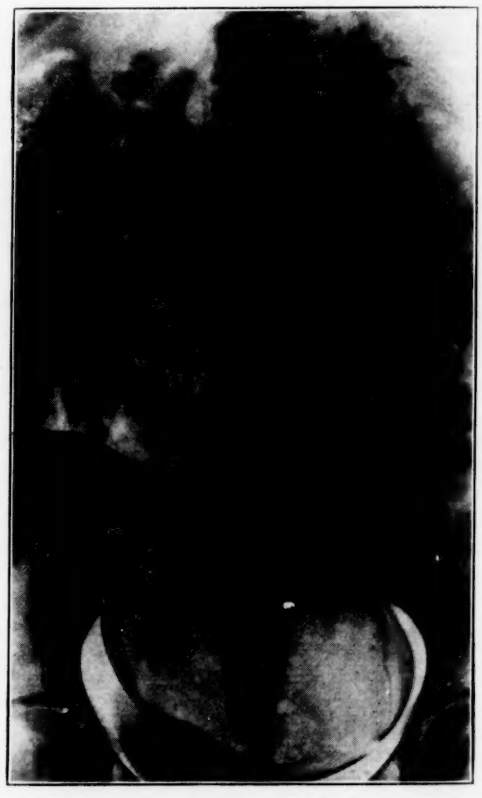

Fig. 2.—Massive right hydronephrosis and dilatation of the right ureter and moderate dilatation of the left kidney pelvis and kinking of the left ureter, with fetal long bones overlying the right kidney pelvis, in Mrs. S. at term.

3. Schumacher, Paul: Arch. f. Gynäk. **143**: 28-35, 1930.
4. Cornell, E. L., and Warfield, C. H.: Am. J. Obst. & Gynec. **23**: 461-471 (April) 1933.

5. Through the courtesy of the Winthrop Chemical Company, the manufacturers of this product, the Neoskiodan was furnished us free for this investigation.

that have been followed from early pregnancy through the delivery and puerperium until the kidney and ureteral conditions were normal.

ANALYSIS

The youngest woman was 17 years of age and the oldest was 37. In this group there were thirty-five primiparas and nineteen multiparas.

Fig. 3.—Decrease in the size of the right hydronephrosis, with some increase in the dilatation of the left kidney pelvis and blunting of the calices and dilatation and tortuosity of both ureters, in Mrs. S., two days post partum.

First Period.—This part of the study lay between the second and fifth months. Fifty-four cases were studied and there was evidence of dilatation in 67 per cent.

TABLE 1.—*Analysis of the Distribution of the Dilatation in First Period*

Calices on right side	52.0 per cent
Calices on left side	15.0 per cent
Pelvis on right side	54.0 per cent
Pelvis on left side	18.5 per cent
Lumbar ureter on right side	52.0 per cent
Lumbar ureter on left side	35.0 per cent
Pelvic ureter on right side	1.7 per cent
Pelvic ureter on left side	3.4 per cent

The dilatation was distributed as follows: right and left sides, 37.0 per cent; right side only, 28.3 per cent; left side only, 1.7 per cent.

The earliest case was examined at two months and showed dilatation of the right pelvis and calices with kinking of the right ureter, and the left side was normal. An analysis of the distribution of the dilatation is given in table 1.

Second Period.—This period of study lay between the sixth and ninth months. Forty-four cases were studied during this period and 93 per cent showed dilatation, an increase of 26 per cent over the first period. The dilatation was distributed as follows: right and left side, 54.7 per cent; right side only, 38.3 per cent; left side only, none. An analysis of the distribution of the dilatation is shown in table 2.

Third Period.—This period of study was in the early puerperium; that is, during the first two weeks after delivery. In this group there were thirty-two cases. In 59.375 per cent the pyelograms showed a return to normal after two weeks. In 34.375 per cent the pyelograms were normal after six weeks and the remaining 6.250 per cent were normal after twelve weeks.

TABLE 2.—*Analysis of the Distribution of the Dilatation in the Second Period*

Calices on right side	92.00 per cent
Calices on left side	30.70 per cent
Pelvis on right side	86.15 per cent
Pelvis on left side	30.70 per cent
Lumbar ureter on right side	74.60 per cent
Lumbar ureter on left side	53.90 per cent
Pelvic ureters	Not visible

Fourth Period.—The fourth period of study included those cases that were not normal at the end of the two weeks and were studied between the sixth and tenth weeks post partum.

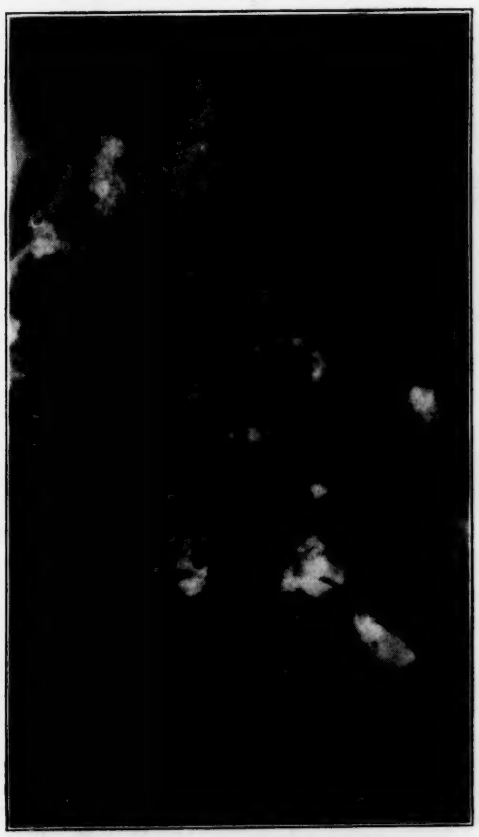

Fig. 4.—Further decrease in the size of the right hydronephrosis with normal pyelogram and ureterogram on the left, in Mrs. S., six weeks post partum.

Although 93 per cent showed some dilatation during the sixth to the ninth month of pregnancy, 4.6 per cent of these forty-four women, who previously showed dilatation between the second and fifth month, were found to be normal during the sixth to the ninth month, so that some time during pregnancy dilatation was found in 97.6 per cent.

Only one patient (2.4 per cent) in this series failed to show dilatation at some period during pregnancy and she was a primipara who had twins. However, she did show a mild dilatation of the calices and lumbar ureter on the left side ten days after delivery. Twenty-one days after delivery the calices had returned to normal and the dilatation of the ureter had decreased 50 per cent; at the end of seven weeks she was normal.

In this series of cases, therefore, 100 per cent showed evidence of dilatation at some time during pregnancy or after delivery.

DEGREES OF DILATATION

For purposes of comparison, we graded the degrees of dilatation from 1 to 6. On the average the dilatation found between the second and fifth months increased in size between the sixth and ninth months.

As previously stated, 4.6 per cent of the dilatations found between the second and fifth months showed no dilatation between the sixth and ninth months. Between the second and fifth months 4.6 per cent of the dilatations remained stationary as the pregnancy advanced; 90.8 per cent of cases showed a progressive increase in the dilatation, some of them up to six times the amount of dilatation seen early in pregnancy. Some trouble was met in the interpretation of a few films because of obscurity caused by the fetal parts overlying the urinary system.

LATERAL DISPLACEMENT OF LUMBAR URETER

As this study progressed, we were impressed by the frequency with which lateral displacement of the lumbar ureter was found. From the second to the fifth month the following displacements were noted: bilateral displacement 12.95 per cent, displacement of the right ureter only 7.40 per cent and displacement of the left ureter only 5.55 per cent, making a total of 25.90 per cent.

As the pregnancy advanced, the number of cases showing displacement increased, so that from the sixth to the ninth month the following incidence was noted: bilateral displacement 24.97 per cent, displacement of the right ureter only 22.60 per cent and displacement of the left ureter only 13.56 per cent, making a total of 61.13 per cent.

Mesial displacement of the right ureter was found in three cases between the second and fifth months and in two cases on the left side, while between the sixth and ninth months only one mesial displacement of the ureter was found, and that was on the right side.

The ureters that were mesially displaced between the second and fifth months became laterally displaced between the sixth and ninth months, except in one case in which the right ureter remained mesially displaced.

Outward displacement of the ureter increased as pregnancy advanced, except in one case in which it was less.

PELVIC URETER

The pelvic ureter was visible between the second and fifth months in 23.2 per cent on the right side and in 37.2 per cent on the left side. Only one case showed dilatation, and this was on the left side.

Between the sixth and ninth months the visibility of the right ureter was 9.3 per cent and the left 20.9 per cent. There was no evidence of dilatation. In the case that showed dilatation between the second and fifth months, the dilatation was not visible between the sixth and ninth months.

After delivery the pelvic ureter was visible on the right side in 61.5 per cent and on the left side in 51 per cent. Only one case showed dilatation and that on the right side, along with dilatation of the lumbar ureter.

GENITO-URINARY ANOMALIES

In this group of fifty-nine cases in which pyelograms were made, the following malformations were found: bifid pelvis, two cases; double kidney and complete double ureter (left), two cases, and bilateral double pelvis, double kidney (left), one case. In one of the cases of complete double kidney and ureter the upper half remained normal while the lower half showed marked dilatation of the pelvis and ureter.

SUMMARY

1. Dilatation of ureters and kidney pelves occurred in 100 per cent of our cases during pregnancy or the puerperium.
2. The striking feature about the dilatation of the ureter during pregnancy is that the dilatation is almost universally above the brim of the pelvis.
3. As a rule, the dilatation is progressive along with pregnancy. There was one exception to this statement, in which case the ureter was normal in advanced pregnancy when earlier it was dilated.
4. Lateral displacement of the ureter, when found early in pregnancy, tends to increase as the pregnancy advances.
5. In none of these cases did pyelitis develop during pregnancy, although marked dilatation and lateral displacement were present.
6. Presentation and position of the fetus could not be brought into causative relationship with dilatation or displacement.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. RANDALL AND MURRAY AND DRS. KRETSCHMER, HEANEY AND OCKULY

DR. F. H. FALLS, Chicago: I have been interested in this subject since I did some work on pyelitis in 1922, particularly the question of dilatation of the ureters in pyelitis and the subsequent contraction that occurs. I wish to raise the question as to why the ureters dilate and why they recover so rapidly in most instances after delivery. It has occurred to me that it is possible that the dilatation may be due to some substance in the blood which inhibits the smooth muscle contraction. There is something in the blood of the pregnant woman that prevents the uterus normally from emptying itself until the fetus is at term. When the time comes, the uterus starts to deliver itself. During the distention of the uterus and while its ability to contract is inhibited, there is distention also of the ureters, and when the uterus empties itself the ureters also contract. Both the uterus and the ureters are made of smooth muscle, are developed embryologically from similar tissue, and are controlled by a similar nervous mechanism. In regard to the observation of deviation of the ureter which Drs. Kretschmer, Heaney and Ockuly brought out, I wish to ask whether the position and rotation of the uterus were noted. Any one who has done cesarean sections has noted marked deviation and rotation of the uterus. When examining the uterus early in pregnancy, one often finds that the two sides of the uterus do not enlarge at the same rate. Frequently the uterus is not pear shaped but is larger on one side than on the other. Embryologically the uterus is a bicornate organ and early in pregnancy the side containing the pregnancy enlarges first. The asymmetrical development may account for the deviation of the ureter early, and the rotation of the uterus increases the deviation as pregnancy advances. In connection with work on pyelitis I examined a number of normal women post partum to see how many had residual urine containing bacteria. Practically 80 per cent had residual urine and most of them had staphylococci and B. coli in the urine. So it seems that the danger of introducing other organisms by careful use of the catheter may be overemphasized. I agree with

Drs. Randall and Murray that women suffering from retention of urine should be relieved. Those who do many perineorrhaphies frequently notice the retention following perineorrhaphy. I frequently note this complication, although there is no injury or irritation to the floor of the bladder. I feel that retention in these cases is due to a reflex inhibition of the sphincter.

DR. VINCENT J. O'CONOR, Chicago: As has been illustrated this morning, excretory urography enables one to demonstrate dilatation of the ureters and renal pelves during pregnancy in a large majority of instances. These studies afford further and added proof of the accuracy of the work of Hofbauer and others that pregnancy is accompanied by the frequent occurrence of ureteral dilatation and, consequent on it, a degree of ureteral atony and a delay in ureteral action. Hofbauer has shown that during pregnancy the lower end of the ureter and the trigon undergo hypertrophic changes in the musculature, associated with hyperplastic changes in the connective tissue with resultant narrowing of the lower part of the pelvic portion of the ureter. These changes are frequent enough to be designated as "physiologic" and can in no way be satisfactorily explained by the time-honored theory of ureteral pressure from the enlarged uterus or the pressure of the fetal head. Histologic evidence suggests an analogy between these processes in the ureter and the trigon, with the involution phenomenon occurring in the uterus during the puerperium. In the presence of urinary infection during pregnancy, this ureteral stasis and added narrowing may favor the development of permanent sclerotic changes in the ureteral wall with a continuation of inadequate drainage and recurrent infection. Clinically, one sees rather frequently women who have never had a urinary infection before pregnancy but who continue to have renal infection and backache unless relieved by ureteral dilation. On the other hand, one sees in even greater number the women with pyelitis during pregnancy whose ureteral activity is normally restored shortly after the puerperium. As clinicians, it seems idle for us to argue back and forth, as we have done in the past, as to whether these individuals had preexisting ureteral obstruction as the cause of their faulty drainage and infection, or whether they had pyelitis in infancy and so forth. The important point is to regard any woman who has urinary infection during pregnancy as demanding follow-up observation of the ureteral dynamics, after the puerperium has terminated. In this way those patients with persistent obstruction may be treated before marked upper urinary tract damage has occurred and those in whom normal function has been restored may be dismissed with the knowledge that the normal cycle has been completed. Whether excess of bile salts in the blood or insufficient pituitary or suprarenal secretion comprises the underlying "physiologic" reasons for these changes during pregnancy remains to be proved. The discussion of Drs. Randall and Murray on the care of the postpartum bladder is excellent proof of the dicta of Dr. Hugh Cabot in his oft repeated pleas for the prompt and sane use of the urethral catheter. If this teaching should be followed there would be a decreased necessity for later urologic care in these patients.

DR. WILLIAM E. STEVENS, San Francisco: Various investigators estimate that dilatation of the kidney pelves and ureters occurs in from 80 to 100 per cent of all pregnant women. The latter figure is more nearly correct. Schumacher, Mengert and Lee and Hodges, studying in all 148 cases by means of excretory or retrograde urography, found as did Kretschmer and his co-workers that dilatation occurs in every case. Dilatation, like pyelitis, during pregnancy is more common and more pronounced on the right side. A diagnosis of pyelitis of pregnancy was made in 106, or 1.3 per cent, of 8,118 cases of pregnancy seen in the department of gynecology and obstetrics at Stanford University School of Medicine. In a study of 225 cases of pyelitis of pregnancy treated in the Stanford service or reported in the literature, I found that the right kidney was involved in 152 cases, the left in twenty-six and both kidneys in forty-six. About 18 per cent of our pyelitis cases that were associated with pregnancy occurred post partum. Dilatation of the upper urinary tract was seen in all of a small series of these cases in which pyelograms were taken. Opinions vary widely as to the etiologic factors in dilatation of the kidney pelves and ureters during pregnancy. Some believe that the latter is due to pressure of the enlarged uterus on the ureter, others because of obstruction of the ureters due to stretching, torsion and traction. Hofbauer states that the dilatation is due to the obstruction caused by the fibrosis and muscular hypertrophy that occur in the lower ends of the ureters during pregnancy. Ureteral and urethral strictures plus the congestion of the pelvic organs associated with pregnancy may be responsible for dilatation, stasis and subsequent pyelitis, especially in the presence of an antepartum low grade infection. It is well recognized that very little pressure is necessary to obliterate the lumen of the ureter. The frequency with which dilatation of the ureter extends upward from the pelvic brim in cases of pregnancy lends weight to the conclusion that distention is often due to pressure of the uterus on the ureter at the brim of the pelvis. The position of the fetus and pressure by the uterus are etiologic factors in the dilatation of the ureters and pelves during pregnancy. Most urologists will agree with Drs. Randall and Murray that postpartum infection of the urinary tract is more common in the presence of residual urine plus overdistention. Other factors also have an influence in producing infection of the postpartum bladder. Following catheterization, two days after delivery, I found residual urine in twenty-nine, or 81 per cent, of thirty-six cases. Evidence of infection was absent in the majority. Residual urine alone without overdistention or other contributory factors probably has very little influence in producing infection.

DR. G. C. PRATHER, Boston: At the Boston Lying-In Hospital, where we have about 2,000 deliveries a year, investigation shows that we have about 3 per cent who fail to void normally post partum. In 1929 I reported a system of intermittent drainage or constant drainage, or a combination of the two in the treatment of these atonic bladders, being especially careful to avoid overdistention of a bladder residual in those having urinary tract infections. I believe that such factors are responsible for certain cases of postpartum pyelitis. Since that time our figures show that in 192 cases of bladder complications post partum, during 1930-1932, there were only six in which pyelitis developed. This incidence of pyelitis is better than the series I reported in 1929, in which there were eight cases of postpartum pyelitis in fifty-eight cases of postpartum bladder complication. The methods of treatment now are essentially the same as those recommended in 1929, so the only conclusion to be drawn is that the house staff is more alert in recognizing these bladder complications and in giving them prompt treatment.

DR. N. S. HEANEY, Chicago: There are some points that I wish to emphasize. The first is the preponderance of right-sided dilatation. During the fourth and fifth month the right side is dilated in 28 per cent and the left side in only 6 per cent of these cases. From the sixth to the ninth month the right side is dilated in 38 per cent and the left side in a low percentage. The work that has been done has left much to be explained. Why does the right side show this marked dilatation? Certainly it is not due to hypertrophy. Hyperplasia and hypertrophy (Hofbauer's theory) occurs at the vesico-ureteral junction and it decreases as one ascends the ureter. We found the pelvic ureter dilated in only one case, while the lumbar ureter was dilated in many cases. If the hypertrophy is a factor, the dilatation should begin at the vesico-ureteral junction and, since hyperplasia and hypertrophy are the same in the two ureters, the dilatation should be the same on the two sides; but it is found thirty-eight times on the right to one on the left. The frequency of right-sided pyelitis over left-sided pyelitis agrees with the increased frequency on the right side of dilatation, and dilatation without a doubt, others to the contrary, is the factor of importance in the etiology of pyelitis.

DR. L. M. RANDALL, Rochester, Minn.: I should like to emphasize again the value of a definite routine in the care of the bladder in the puerperium. Without this one has to depend considerably on the patient's complaint of discomfort and inability to void; and by the time this complaint is made, overdistention may have occurred. We have found since the institution of a definite routine that our bladder complications during puerperium have been reduced to a minimum.

URETHROCYSTOGRAPHY IN THE MALE

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NEW YORK

The lower urinary tract has been the subject of intensive investigation for the past decade, during which notable advances have been made particularly in the field of instrumental diagnosis and treatment. With increasing application, certain limitations of these procedures became apparent indicating the need for a supplementary method by which a clearer conception of form and function could be obtained. Urethrocystography fulfils this need and should be used as a part of the routine examination of patients presenting certain lesions of these organs.

Although, in our hands, urethrography has proved a valuable diagnostic procedure, its scope is limited as it fails to demonstrate pathologic conditions other than those confined to the urethra and its adnexa. Cystography, while more extensively employed and better understood, also has its limitations. Because of the close anatomic and functional relationship of the posterior urethra, adnexa, vesical neck and bladder muscle, a more accurate concept of their morphology and function can be obtained by their simultaneous and complete delineation than from urethrography or cystography alone. Previous experience with these two methods enabled us to develop a technic for the performance of urethrocystography by combining several procedures previously advocated by other workers with a simplified manometrically controlled syringe devised by us. Our early work convinced us that manometric control adds greatly to the accuracy and value of the procedure, minimizing its dangers and aiding in the duplication of observations on repeated examinations. The types of apparatus previously introduced are too cumbersome for routine use and on this account have been discarded by many workers.

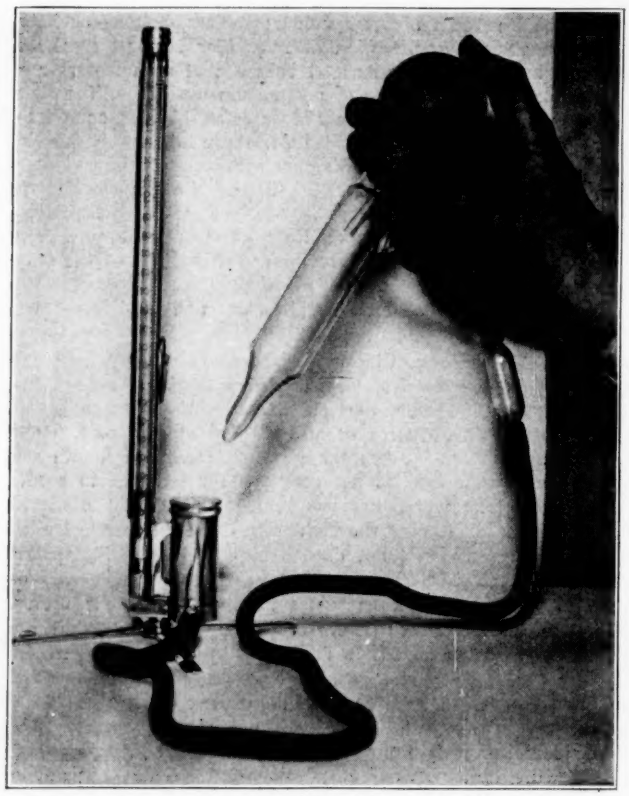

Fig. 1.—Asepto syringe, with by-pass leading to air chamber, trap and manometer.

Fig. 2.—Normal urethrocystogram, oblique view. Anatomic landmarks and sphincteric contours clearly defined. Verumontanum demonstrated as a negative shadow.

Our syringe (fig. 1) possesses all the essential elements of a pressure apparatus. It consists of a two ounce Beckton Dickinson Asepto syringe modified by the inclusion of a by-pass and trap, which prevents the flow of the medium into the manometer and renders possible the retention of all the advantages of manometric control while employing a simple syringe technic.

The complete and simultaneous delineation of the lower urinary tract by this technic provides a valuable supplement to the usual methods of diagnosis, and in certain instances in which instrumentation is impossible, undesirable or contraindicated, urethrocystography delineates the nature of the lesion and indicates the choice and extent of operative measures.

CONTRAST MEDIUMS

Solutions in the concentrations ordinarily employed in cystography are usually too radiopaque and may obscure smaller intruding masses and the outline of the bladder base when used for urethrocystography. We prefer a 3 per cent solution of sodium iodide, although in bladders of large capacity a 2 per cent solution is sufficient. Various substances have been advocated

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for urethral delineation. We believe that any solutions used for this purpose should be nonirritating, sufficiently radiopaque, sterilizable, nontoxic, miscible with urine, and harmless if introduced into the circulation. The preparations of iodized oils do not fulfil all these requirements. The various compounds used for intravenous urography are ideal but too expensive for routine use. Simple solutions of sodium iodide in concentrations sufficient to give shadows of adequate density cause irritation. In our experience, equal proportions of a 20 per cent solution of skiodan and a solution consisting of sodium iodide 17.5 per cent, sodium bicarbonate 2 per cent and gelatin 1 per cent provide a medium adequate for ordinary use. Increasing the proportion of skiodan obviates any tendency toward irritation. The fact that the use of improper solutions may give rise to chemical urethritis of varying grades of severity and duration should be borne in mind.

TECHNIC

The patient is placed on an x-ray table equipped with a Bucky diaphragm. A small catheter is gently introduced under careful asepsis, the bladder capacity estimated with sterile water and a quantity of the 3 per cent solution of sodium iodide slightly less than the estimated capacity is introduced through the catheter, which is then withdrawn. Gentleness of instrumentation is important, as it promotes relaxation and gains the cooperation of the patient. After trying the various positions, we have come to the conclusion that the oblique and anteroposterior positions are most satisfactory. During the first exposure the patient is placed

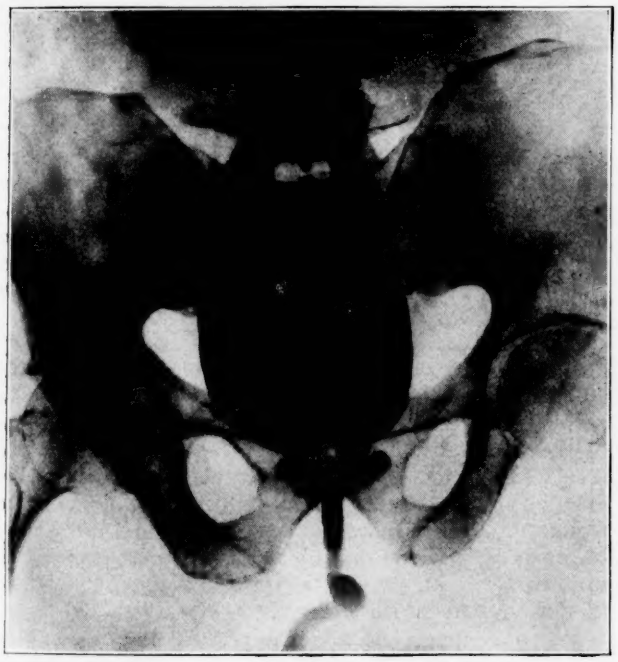

Fig. 3.—Prefibrosis of posterior vesical lip, two and one-half years following nephrectomy for calculous pyonephrosis, showing associated posterior urethritis, prostatitis, and elevation of bladder base. Contracted sphincter and ureteral remnant also demonstrated. Anterior posterior view.

obliquely on the table, with the under thigh flexed and the upper thigh extended. This posture is maintained by the patient or, if he is unable to retain this position, he is supported by sand bags. The penis is extended, below and parallel to the flexed thigh, and the urethral contrast solution injected through the meatus, the manometrically controlled syringe providing a safeguard against the use of excessive force. The total quantity of fluid used for urethral distention is approximately 50 to 70 cc. Elaborate methods designed to prevent leakage are unnecessary, as adequate apposition of the bluntly tapered syringe tip and the meatus can be maintained by simple digital pressure. The use of oily solutions increases the possibility of leakage.

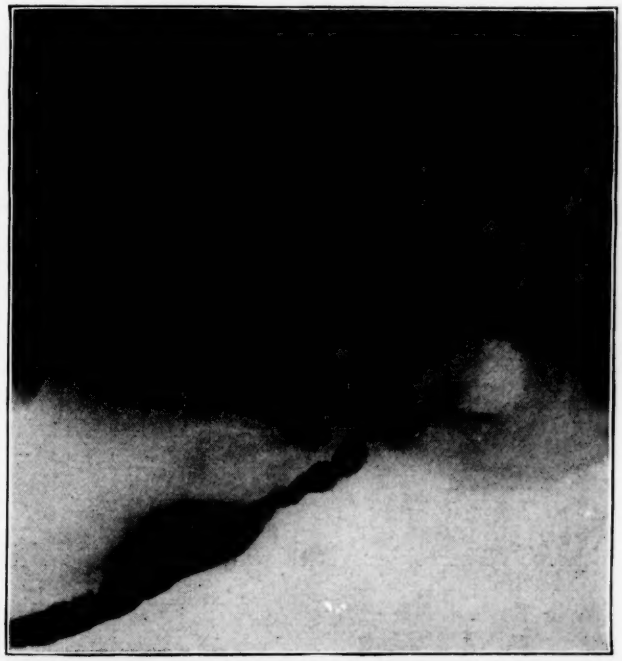

Fig. 4.—Oblique view of inflammatory stricture at bulbomembranous junction. Glands of Littré, deformity of bulb, tortuous nature of the stricture and irregularly dilated membranous urethra demonstrated.

The tube is focused on the lower portion of the symphysis pubis and inclined toward the head at an angle of 5 degrees. The x-ray exposure is made as the fluid is flowing freely into the bladder. Should the flow be impeded, the patient is instructed to void as the exposure is made. In the exceptional case in which the bladder cannot be entered because of impassable obstruction, the bladder contents may be rendered opaque by the intravenous use of a contrast substance, after which the urethra can be filled in the ordinary manner. A second film is exposed with the patient in the dorsal position, the legs extended and the penis drawn down between the thighs. The best roentgenograms are obtained by using an x-ray apparatus of the greatest penetration, thus diminishing the time of exposure.

The statement has been made by Ledoux-Lebard and his associates [1] that the injection pressure should not exceed 300 mm. of mercury. Ordinarily the pressure does not exceed from 150 to 160 mm. and we have found it unnecessary to go above 220 mm. A drop in pressure of from 10 to 20 mm. is usually noted as the external sphincter relaxes. Pressures exceeding 200 mm. of mercury suggest the possibility of trauma, spasm, or lack of cooperation on the part of the patient, which may prevent satisfactory filling of the posterior urethra. Should this occur, the procedure must be interrupted, the patient reassured and the injection cautiously continued. Excessive pressures may result in

1. Ledoux-Lebard, R.; Garcia-Calderon, J., and Petetin, J.: L'uréthrographie, Paris méd. **1**: 105-111 (Feb. 6) 1932; X-Ray Exploration of Male Urethra, J. de radiol et d'electrol. **15**: 473-490 (Sept.) 1931.

mucosal injury and, when this occurs in the bulb, the contrast material may enter directly into the vascular system, owing to the intimate relationship of the vessels to the mucosa in this region. In our experience this has occurred only in cases of urethral stricture involving the bulbomembranous junction in which recent instrumentation had been attempted and manometric control was not employed. This efflux may take the form of a slight extravasation with entrance of the contrast solution into a few small vessels, or it may be sufficiently extensive to delineate the venous channels of the corpora cavernosa and the entire pelvic and gluteal regions (fig. 5). Although we have not observed any constitutional reaction or permanent ill effects following urethrovenous injection, its occurrence emphasizes the necessity of employing innocuous solutions. Following instrumental exploration of the canal, an opportunity should be afforded for the traumatized urethral areas to heal before urethrocystography is performed. Furthermore, should both roentgenographic and instrumental investigation be contemplated at one sitting, the former should precede other intra-urethral manipulations. Injections of contrast mediums are contraindicated in the presence of acute infections, active inflammations and recent extensive injuries.

INTERPRETATIONS OF URETHROCYSTOGRAMS

The outlines of the normal urethra (fig. 2) are sharply defined and regular, and the contour is symmetrical. The caliber varies with the anatomic areas

Fig. 5.—Urethrovascular injection in a patient with impassable stricture, showing a widespread escape of medium into the venous chain draining into the internal pudendal and hypogastric veins. No manometric control.

of narrowing and dilatation, is widest at the bulb, and diminishes markedly as the membranous urethra is approached. The shadow of the bulb in the oblique view possesses a characteristic onion-shaped appearance, while the tortuous contour of this region in the anteroposterior film is the result of superimposition of shadows. The membranous urethra, in both anteroposterior and oblique films, is represented as a narrow pyramid with the base situated distally. The posterior urethral shadow is narrower than that of the anterior urethra, is fusiform, and is widest at its midportion. The verumontanum may produce an elliptic area of decreased density in the anteroposterior film or a filling defect on the urethral floor in the oblique view. In the anteroposterior position the posterior urethral shadow

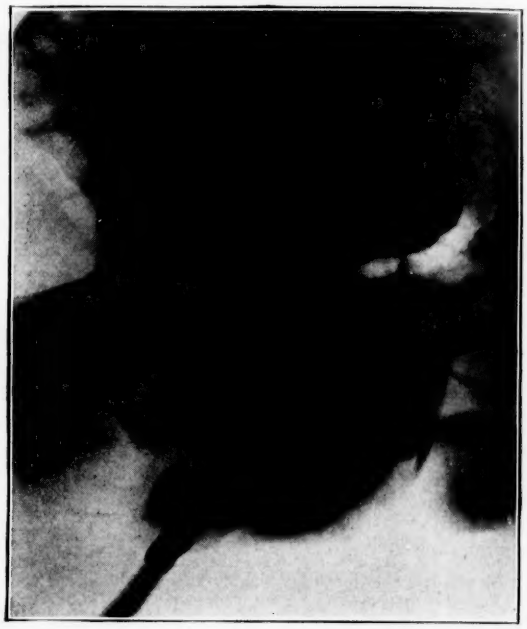

Fig. 6.—Prostatic enlargement. Oblique exposure, showing distortion and angulation of posterior urethra, patent prostatic ducts, displaced and widely open internal meatus. Marked intra-urethral encroachment and moderate intravesical intrusion demonstrated. Note irregularly dilated bladder, with numerous sacculations.

lies between the two pubic bones and terminates at right angles to the bladder base. The bladder has the usual circular or oval contour, with the inferior border parallel to the upper margin of the pubes. In oblique films the urethral shadow overlies the pubic ramus and merges with that of the bladder at an obtuse angle. The curve of the bladder base is larger and more gradual than in the anteroposterior view.

Advanced chronic urethritis is manifested by fairly definite changes. In the anterior urethra those most frequently noted are irregularities of outline and caliber, resulting in a characteristic undulatory appearance of the urethral margins, while the glands of Littré or accessory pockets are demonstrable at times in the oblique view. There may be either dilatation due to atonicity of the walls or loss of the normal dilatability because of infiltration and spasm in the posterior urethra. The internal sphincter and bladder base show no deviation from the normal.

When concomitant adnexal disease is present, the prostatic and ejaculatory ducts are frequently delineated and occasionally the injected medium may be discernible in the seminal vesicles, Cowper's glands and para-urethral pockets. This demonstration of the accessory urethral structures is of diagnostic importance. Our experience confirms the observations of Langer [2] that normal adnexal structures do not readily permit

2. Langer, E.: Roentgenography of the Male Urethra, Venereol. i. Dermat. **6**: 36-40 (May) 1929; Pulmonary Embolism from the Use of Iodized Oil in Urethrography, Roentgenpraxis **4**: 405-406 (May) 1932 (comment on article of Eichler, P.: Pulmonary Embolism from Use of Iodized Oil, ibid. **4**: 138-140 [Feb. 1] 1932). Die Roentgendiagnostik der mannlichen Harnröhre, Leipzig, 1931.

entrance of the injected fluid. Flattening of the bladder base and irregularities in its contour may be present, depending on the extent and severity of prostatic involvement.

In advanced prefibrosis of the posterior vesical lip (fig. 3) the appearances are those accompanying chronic urethritis with adnexal involvement plus sphincteric irregularities and alterations in the angle of entry of the urethra into the bladder. Changes in contour and regularity of the bladder shadow, if present, are proportionate to the degree of obstruction. While the urethrocystographic changes are often sufficiently characteristic to indicate the nature of these inflammatory lesions, confirmation by clinical and cysto-urethroscopic examinations is desirable.

STRICTURE OF THE URETHRA

The use of the micturitional method for the delineation of stricture is unsatisfactory for, although the proximal portion of the urethra can be outlined, visualization of the constricted area and the distal portion of the urethra may be incomplete. Simple anterior injections do not adequately delineate the urethral lumen proximal to the site of constriction. The combined method clearly depicts the nature of the obstruction and the secondary urethral (fig. 4) and bladder changes and is particularly applicable to patients with strictures of small caliber in whom instrumentation is difficult, who present fistulas, or on whom previous operations have been performed. Changes characteristic of chronic inflammation may be present in the anterior urethra or its accessory glands (fig. 4), and false passages may be visible. The most frequent location of constriction of the inflammatory type is at the bulbomembranous junction, and the bulb is frequently deformed. Traumatic strictures may occur at any site. The degree of involvement and the character of the lumen in the constricted zone are well delineated. Indications of pathologic changes in the posterior urethra characterized by irregularly dilated segments are frequently seen and the adnexal passages may be visualized when actually involved. Deformities of the vesical sphincter, the bladder base and the bladder itself, as well as diverticula and vesicorenal reflux, are demonstrated when present. Both views are essential for the complete delineation of the extent of the stricture and all complicating disturbances. Urethrocystography plays an important rôle in this field, both as a supplementary and as an independent method of diagnosis, and it also provides a graphic record of the progress of these cases.

Fig. 7.—Moderate intra-urethral and intravesical prostatic enlargement. Few associated changes.

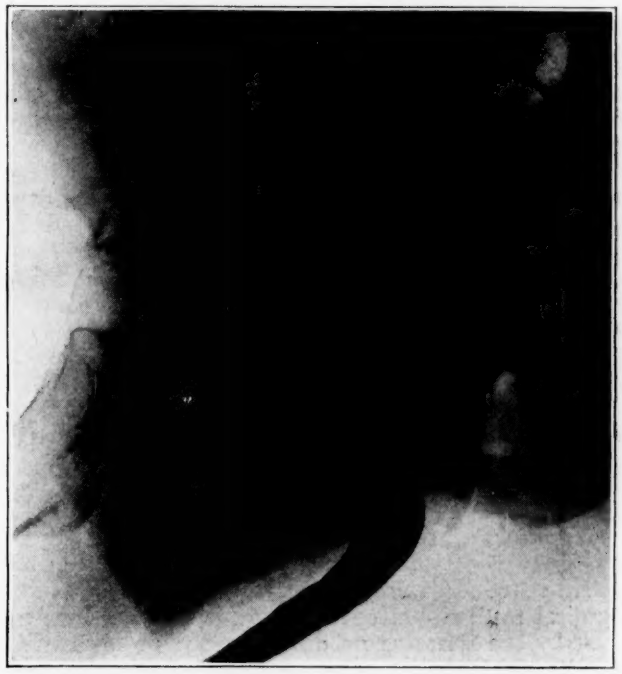

Fig. 8.—Prostatic enlargement. Apparent increase in anteroposterior diameter of prostatic urethra. Forward angulation at vesical neck, intra-urethral encroachment and marked intravesical intrusion demonstrated.

ENLARGEMENT OF THE PROSTATE

There are no characteristic changes in the anterior urethra, bulb or external sphincter in prostatic enlargement. The spindle-shaped contour of the posterior urethra is altered in the presence of encroaching masses and the verumontanum may show evidences of lateral compression. The direction of the prostatic urethra may deviate laterally and anteroposteriorly, depending on the size and disposition of the prostatic lobes. Forward displacement of the supramontane portion of the prostatic urethra is a common finding in median lobe enlargements and, in the smaller types, may be the only discernible change. This distortion results in the loss of the normal obtuse angle of entry of the urethra into the bladder and is manifested as a Coude or bi-Coude deformity in the oblique view. Median bars produce appearances similar to but less extensive than those caused by median lobes. In the lesser grades of vesical neck deformities the roentgenographic changes should be considered in conjunction with the data obtained from cysto-urethroscopy.

The internal sphincter may show no change. In the presence of large intravesical lobes or of intra-urethral encroachments that render the sphincter rigid, the displaced internal meatus is widely open and shows evidence of distortion. Elevations and irregularities of the bladder base are proportionate to the degree of

intravesical prostatic intrusion. Any change in the bladder outline due to loss of elasticity, trabeculations, sacculation and diverticula is demonstrated. Concomitant tumors, calculi and vesicorenal reflux are readily demonstrable. The apparent increase in caliber of portions of the urethra, variations in density with the appearance of double columns of fluid and confusion as to the relative sizes and disposition of the various lobes may lead to errors of interpretation unless both planes of exposure are utilized (figs. 6, 7 and 8).

Carcinoma of the prostate produces urethrocystographic deformities similar to but more irregular than those caused by benign enlargements. Filling defects and irregularities resulting from extensions involving the bladder wall may be shown. Although the diagnosis of prostatic enlargement is readily made by the usual methods of examination, urethrocystography definitely indicates the size of the enlargement and its relation to the urethra and the bladder, and gives a more accurate idea of the contour and location of projecting and overhanging intravesical intrusions than can be obtained by any other method. Such data enable the surgeon to adapt his operative procedure to the needs of the individual case and, in those cases in which endo-urethral resection is elected, provides an indication of the location and the amount of tissue to be removed.

OBSERVATIONS FOLLOWING OPERATIONS FOR VESICAL NECK OBSTRUCTIONS

Urethrocystography provides a graphic method of studying the results of operative procedures for the relief of vesical neck obstruction. Regardless of the surgical method employed, good results are characterized by the decrease or disappearance of obstructive manifestations. Following successful suprapubic enucleation, the sphincters are usually intact and, after an interval, the prostatic urethra tends to resume a normal contour. The distal portion of the verumontanum may be discernible. The appearance varies with the completeness of enucleation, degree of operative trauma to adjacent structures and other factors interfering with proper healing. Evidences of cavitation in the prostatic bed, diverticular pockets, atony or constrictions of the internal sphincter and irregularities in the lumen of the prostatic urethra are common observations in unsatisfactory cases. We have demonstrated injury of the external sphincter and membranous urethra, strictures involving the entire length of the prostatic urethra, and complete atresia of the urethral lumen following suprapubic prostatectomy.

Subsequent to the performance of endo-urethral resection, the extent to which the obstructions have been removed and the urethral contours restored can be accurately ascertained. Although adequate canalization may have been accomplished, deformity of the bladder base may persist as a result of the undisturbed intravesical portions of the gland. The nature and location of these remaining intrusions are shown in the urethrocystogram and any necessity for further resection is clearly demonstrated.

It is readily possible to ascertain the extent of involvement of the lower urinary tract in neurogenous disorders by means of urethrocystography. The condition of the bladder musculature (fig. 9) and the functional capacity of the sphincters are well shown. The coexistence of tabes dorsalis and prostatic enlargement can be demonstrated by this method. Urethrocystography may prove of value as a graphic supplement to cystometric observations.

RECAPITULATION

Our purpose in this communication has been to call attention to the advantages of a diagnostic method that has the same applicability to lower urinary tract conditions as ureteropyelography has to those of the ureter and the kidney. Just as the latter procedure must be used in conjunction with cystoscopic and other observations, urethrocystography must be supplemented by observations derived from all sources. The statements made in the preceding portion of this presentation are, therefore, based on combined roentgen, instrumental and clinical studies during the past two years.

The successful employment of this procedure depends on the establishment of a simple but definitely standardized technic. The syringe and the method developed by us are presented as a means of accomplishing this object.

Fig. 9.—Tabes dorsalis, with vesical symptoms but without incontinence.

We have adopted the use of watery solutions because, in addition to fulfilling all the requirements of a satisfactory medium, they penetrate readily into the smaller canals and pockets. Iodized oils do not possess these advantages. Their use may be attended by danger if a considerable quantity is introduced into the circulation, as the result of urethrovascular injection. We have at different times employed solutions of various types and concentrations and at present are convinced that eventually aqueous solutions will be found best suited for this purpose.

The combined method has adequately demonstrated bladder, urethral and adnexal changes and has proved less expensive, less time consuming and more satisfactory as a routine diagnostic method than urethrography or cystography as individual procedures.

CONCLUSIONS

1. With careful technic and innocuous solutions, urethrocystography is harmless.
2. Aqueous contrast mediums are advocated.
3. Gentleness in manipulations and avoidance of excessive pressure are essential.

4. Manometric control is recommended and a syringe for this purpose is presented.

5. The possibility of urethrovascular injection exists regardless of the type of solution used and precautions should be exercised to minimize its occurrence.

6. Urethrocystography is a valuable diagnostic method and should be employed in the routine examination of patients with disorders of the lower urinary tract.

7. Urethrocystograms provide a graphic record of the progress of each case. They aid the surgeon in the selection of operative procedures and in evaluating the final results.

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ABSTRACT OF DISCUSSION

DR. M. A. NICHOLSON, Duluth, Minn.: The idea of using both cystogram and urethrogram in the same picture originated with Dr. Hyams and his associates. Their method differs somewhat from mine. My pictures were all made with iodized oil. These urethrograms illustrate the fact that the oil solution penetrates into the finest ducts and through threadlike strictures: the patients have not the slightest discomfort with its use, and its cost will compare favorably with the intravenous dyes as it may be diluted from 50 to 60 per cent. Many have questioned whether this procedure has practical value. In one case a man for seven years passed urine through a fistula in the scrotum. I was unable to pass anything down the anterior urethra except a very fine filiform bougie. An anterior urethrogram showed multiple strictures of the urethra. The sinus was dissected out and a new urethra constructed, to the great satisfaction of the patient. I think this case demonstrates the practical value of urethrography.

DR. ROBERT GUTIERREZ, New York: Dr. Hyams and his collaborators made an appeal for urethrocystography and I feel strongly that this should be a routine method of examination, particularly when there are conditions that cannot be revealed by other methods and it is essential to establish an accurate diagnosis before operation. Urethrocystography has served to emphasize the fact that intravenous urography does not entirely solve the problem of establishing a correct diagnosis; it does not assist in discovering pathologic lesions affecting the lower part of the urinary tract. Some years ago Dr. Lowsley and I reported six cases of diverticula of the urethra. At this time I collected and tabulated from the literature 116 cases. I was amazed to see that over 50 per cent of them were not properly diagnosed but were found post mortem or at the operating table. In but few cases was the diagnosis made before the operation by the use of urethrograms, as in the cases that we reported. Certain points of interest that we stressed in our paper are worth bringing up at this time; namely, that the urethrogram should be made by injecting the urethra and the bladder at the same time, and that it should be taken at the time of micturition. Diverticula of the urethra, acquired or congenital, may be found in any part of the urethra, but they are more commonly present in the prostatic urethra, particularly after rupture of a prostatic abscess that has been entirely overlooked. In most of these cases, surgical excision is the proper indication. A study of the literature has revealed that when diverticula of the membranous or prostatic urethra are present, a resection has often resulted in a perineal fistula, necessitating several operations. In order to obviate these complications we recommend diverting the urine from above by cystostomy previous to the operation. Thus the perineal wound is given a chance to heal by primary union, and without complications. I may repeat that, while intravenous urography is of great value, one must bear in mind that it is not the key to all conditions encountered in modern urology and particularly in pathologic lesions affecting the lower urinary tract, as the so-called incurable strictures, tumors, diverticula and other unrecognized conditions in which urethrograms are properly indicated in an effort to establish a correct diagnosis.

DR. HARRY P. LEE, Iowa City: Last year Dr. Alcock returned from the meeting of the American Medical Association enthusiastic over air cystograms. We recognized the dangers accompanying the air cystograms but nevertheless started doing them, and the pictures were so superior to the sodium iodide cystograms that we have continued doing them and have developed a technic of doing air cystograms in every prostatic case that is seen in the clinic. We have found that air cystograms are not very good in delineating diverticula of the bladder, so we take plain plates in order to eliminate any stones and then take an anteroposterior sodium iodide cystogram to show any diverticula. We found the air cystograms of great assistance but needed a new technic to visualize the prostatic urethra. The use of iodized oil in all cases in a clinic is very expensive, so Dr. Flocks has had made up a jelly and incorporated in this iodized oil, which gives a semiliquid material, the consistency of which can be changed by adding any amount of water necessary. We then do a combined air cystogram and iodized oil jelly urethrogram, with the patient at about a 45 degree angle and in this way visualize the prostate and the prostatic urethra. We have done more than 300 air cystograms and have had no trouble so far.

DR. N. G. ALCOCK, Iowa City: I am enthusiastic over urethrograms and do not know how I could get along in prostatic work without air cystograms and urethrograms. This gives us much more accurate information than cystoscopy does.

DR. J. A. HYAMS, New York: The value of urethrocystography lies in the complete delineation of pathologic changes located in the urethra, adnexa or bladder. This film indicates the presence of a large tumor of the bladder wall, which overlies the right urethral opening. Above the filling defect caused by the tumor, the ureter is partially delineated by the reflux of the contrast medium. In his presentation, Dr. Herbst emphasized the frequent association of diverticulum of the bladder with obstructive vesical neck changes. This method lends itself to a graphic demonstration of changes of this type. We agree with Dr. Nicholson that urethrography has a definite place in the delineation of the lower part of the urinary tract but feel that its field is limited. In stricture of the urethra, our combined method is more advantageous than the urethrogram made by simple injection because it delineates not only the nature of the obstruction but the secondary urethral and bladder changes as well. The possibility of urethrovascular injection contraindicates the use of any contrast medium that fails to conform to the essential requirements previously detailed. The iodized oils, plain or combined with various vehicles whether bland oils or jelly, do not fulfil these requirements. The numerous reported accidents following air distention of the bladder and urethra contraindicate its routine use, particularly when innocuous mediums are available. We wish to stress the need of gentleness, controlled pressure and the use of safe contrast solutions, and to emphasize the fact that urethrocystograms delineate not only surface but subsurface changes as well.

The Proof of a Drug's Efficacy.—It seems unbelievable that the profession can long continue tolerant of a system under which drugs and other remedial measures are vaunted on an inadequate basis of recorded experience, or that doctors should be almost forced by popular clamor to give and to transfer allegiance, an allegiance stimulated by report of advertisement and not by proved worth, temporarily to this remedy or to that. It is not through easy, but often fallacious, general impressions that full progress is to be expected, but mainly through deliberate unbiased and untiring study of the reactions of patients to given remedies. It is the duty of clinical science, in this branch of its activity, to maintain close linkage with pharmacology; but it is equally its duty clearly to recognize that, so far as both manner and intensity are concerned, the action of a drug on man is not necessarily the same as the action on an animal, and that the action on the diseased is not necessarily the same as on the healthy man. The proof or disproof of a drug's efficacy rests finally on the test in patients.—Lewis, Thomas: Clinical Science, *Lancet* **2**:905 (Oct. 21) 1933.

SKELETAL TRACTION IN TREATMENT OF FRACTURES OF SHAFT OF TIBIA AND FIBULA

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OKLAHOMA CITY

The most important points to be considered in the treatment of fractures of the tibia and fibula are:

First, general condition of the patient.
Second, extent of resulting permanent disability.
Third, length of temporary total disability.
Fourth, cost of medical care.

In the consideration of these four major problems, I agree that the general condition of the patient is most important, but that phase of the subject cannot well be discussed here. Therefore, from a technical standpoint, the first real problem is the prevention of permanent partial disability. It should be the most important consideration; more important than the temporary total disability, with its resulting loss of time and loss of wages; also more important than the cost of medical care.

Provided as good results could be expected in all cases of severe fractures of the tibia and fibula as are expected in the cases of simple transverse fractures, a

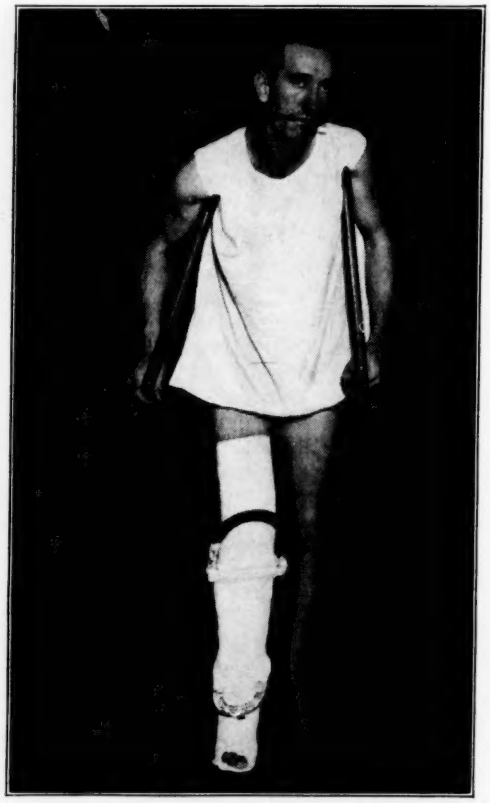

Fig. 1.—Compound comminuted fracture of tibia and fibula, treated by wire fixation above and below fracture. Patient able to leave the hospital within a few days.

circular bandage or the splint method of treatment would be far more practical than skeletal traction. But many factors arise to make the treatment of these severe cases very complicated and expensive in obtaining the maximum degree of normal function. In the simple types of fractures of the tibia and fibula, either a molded plaster splint or a bivalved circular plaster bandage is sufficient and calls for no hospitalization beyond the incidence of reduction and application of fixation; but, unfortunately, severe multiple or comminuted fractures do not respond favorably to these

Fig. 2.—Fixed wire traction above and below fracture after reduction by weight traction.

simple measures. As a rule, fractures of the tibia and fibula, unless the case is of several or more days' duration, can be reduced, but the real difficulty is in maintaining reduction. Loss of bony contact results in angulation and overriding because of involuntary muscle spasm. In these severe cases, the swelling is very marked, and, as soon as the leg decreases in size, the appliance is too large, allows deformity to take place and permits changes in the relationship of the bone fragments.

Traction is the best means to combat tendencies to deformity. Lower leg skin traction has not proved to be very practical, especially in cases in which union is slow.

Skeletal traction has many advantages. Space will not permit the discussion of the other types of skeletal traction, such as the Steinmann pin, calipers, and the like. In all my cases the Kirschner wire technic has been used as follows:

1. Cases in which weight traction is used in conjunction with the Braun frame, as described by Boehler, the Kirschner wire being introduced through the middle of the os calcis; for example, cases coming in several days after injury; also spiral or badly comminuted fractures.

2. Cases in which the wire is introduced through the os calcis and reduction carried out immediately, followed by the use of the long leg plaster bandage with the knee flexed. The wire and bow are incorporated in the cast. These cases are usually those in which the fractures are low in the tibia and fibula. A spinal or general anesthetic is used when a manual reduction is done at the time the wire is introduced.

Read before the Section on Orthopedic Surgery at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 16, 1933.

3. Cases in which the fracture is in the middle or upper third. Two wires are placed, one just below the knee and the other just above the ankle. A cast is applied to the fracture site above and below; then, with traction applied, the two casts are united by connecting plaster.

In the first method it is necessary to hospitalize the patient for a sufficient time for reduction of the fracture and in some cases until there is considerable callus before the weight is released. The second and third methods enable the patients to be out of bed immediately; therefore hospitalization is usually unnecessary.

These methods are not new, as the principles of skeletal traction in fractures of the tibia and fibula have been described by many men, such as Conwell, White and Eikenbary.

In the first group of cases, skeletal wire traction in conjunction with the Braun frame, is used in cases

Fig. 3.—Union twelve weeks after reduction.

in which the fracture is of several days' duration or in cases in which it is thought best to maintain perfect alinement and still permit the leg to be inspected constantly. A local anesthetic is sufficient in this type of case. During the time this method is carried out it is necessary for the patient to remain in the hospital. As soon as the reduction is satisfactory and the general condition of the leg will permit, a circular plaster bandage is applied with the wire and bow incorporated in the cast, in the average case for a period of about two weeks.

In the next group of cases, comminuted fractures in the lower third and into the ankle joint may be treated by introducing the Kirschner wire through the os calcis; then, by traction on the bow, which is attached to the wire on each side, the fracture may be reduced; and, with the knee in a slight flexion position and the foot at a right angle, a circular plaster cast may be applied from the middle of the thigh to the tips of the toes, incorporating the wire and bow in the cast. The cast may be split to allow for swelling and not interfere with the wire fixation. At the end of from three to four weeks, the wire is removed at the time the cast is changed. This method holds the fragments satisfactorily and allows the patient to be on crutches and leave the hospital immediately.

In the third group of cases, in which the fractures are in the upper and middle third of the shaft, I have found it best to introduce two wires, one above the fracture and one below, the upper wire being placed about 3 inches below the knee and the lower about 1 inch above the ankle. Bows are attached to maintain tension in the wire. The plaster is applied from the groin down to the fracture line, incorporating the upper wire and bow. A cast is then applied from the tips of the toes to the fracture line, incorporating the lower wire and bow. Then, by manual traction, the fracture is reduced, and the upper and lower plasters are united.

Fractures seen within the first few hours are very satisfactorily reduced by this method. In these cases the patient may be on crutches within a few days and avoid the cost of hospital expense. In the majority of cases in which there is considerable comminution and in the multiple types as well, union is slow. By using this method, the fragments will be held accurately in spite of the fact that the leg will show the usual atrophy.

There has been some criticism of the use of skeletal traction because of the expense of bows, wires, wrenches, drills and the like. From my experience, I feel that in a considerable number of fractures, skeletal wire traction has no substitute. Undoubtedly, many cases that formerly went to open operation may be treated satisfactorily in this way. Therefore the equipment necessary should be obtained by any one who takes on the responsibility of caring for severe fracture cases.

In compound fractures, the fragments can be maintained in proper position by using either the wire weight traction or the two-wire fixed traction. A window may be cut in the cast and the wounds dressed when necessary without danger of the fragments slipping, because of the loss of continuity of the circular plaster.

After ample callus is in evidence, the wires and cast may be removed and a long or short laced leather cuff brace applied. In fractures of the upper third, it is necessary for these braces to extend above the knee.

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ABSTRACT OF DISCUSSION

DR. F. J. GAENSLEN, Milwaukee: This paper illustrates the great advantages that have come through the use of skeletal traction and particularly through the use of the Kirschner technic, which is deservedly becoming popular. I believe that more extensive use of skeletal traction will help toward attaining better results and shortening hospitalization periods materially, two factors in which not only the patient himself is vitally concerned but also insurance companies. Pressure sores, always to be feared when a cast is applied after simple traction, may be dismissed from the mind when skeletal traction is used and the fixation nails or wires are incorporated in the cast. I would call attention especially to the danger of overriding in oblique fractures. Carey has shown that if a dog's femur is cut transversely and in this transverse fracture a mechanism is interpolated for measuring pressure, this device will register far greater pressure on electrical stimulation of the thigh muscles of the anesthetized animal than is recorded during simple weight bearing. The marked tendency to displacement or sliding by of one fragment on the other is thus readily understood even though no weight bearing is allowed. Skeletal traction in such a case is especially useful, since the incorporation of the Kirschner wires, one above and one below the site of the

fracture, will facilitate further spreading or angulation, should this be indicated after roentgen examination. In the case of fractures extending through joints there is often difficulty in holding the smaller fragment in place even after open reduction. I have maintained fixation by knitting needle spikes. These are readily driven through the bone, provided the cortical shell is fairly thin. If the cortex is thick, I tunnel a path for the knitting needle with a Kirschner hand drill, following a suggestion of Dr. Blount to facilitate the driving in of the pin. If two pins are then inserted, more or less at right angles, very secure apposition and fixation are attainable. I believe that this method is far superior to metal or bone screws or nails. The needles are cut short but project sufficiently so that they can be readily located after beginning union, when they may be grasped with a wire nipper, after a nick has been made in the skin, and withdrawn without difficulty. Dr. West is rendering valuable service in again stressing the advantage of skeletal traction, in the differentiation of his cases into various groups, and in emphasizing the point that not all are treated along the same line.

DR. W. B. CARRELL, Dallas, Texas: I am sure that all will agree with Dr. West that certain definite principles must be carried out in the treatment of fractures, even though the details of application may be varied. Several years ago it was customary to operate in more fractures in the leg than in recent years. When more was learned about handling traction cases, especially with the aid of the Kirschner wire, operations were found to be unnecessary. Likewise, as more thought has been given to gentle manipulation with the advantage of suitable position of the leg and good temporary traction as described by Watson Jones, this plan has been used for many cases which were formerly treated in traction. Whether a fractured leg is treated with open operation or traction or the fragments are manipulated into position, due regard must be given the soft tissues, with particular reference to the circulation. In a fractured leg of four or five days' duration, with shortening, rapid and heavy traction may do as much harm as vicious manipulation. In such a case the weight should be increased gradually, with stretching of soft tissue, which would otherwise be torn. If traction is applied immediately after the injury, sufficient weight should be applied at once to overcome the deformity and there should be no additional damage in the soft tissue. This emphasizes another principle in fracture treatment; namely, that all fractures should be regarded as emergencies, and immediate reduction accomplished before soft tissue infiltration occurs.

DR. DANIEL H. LEVINTHAL, Chicago: I want to add to the emphasis that has been placed on early reduction. In spite of the fact that this has been mentioned over and over again, fractures continue to be treated by delayed reduction. Dr. West has added to the work of Orr and Thomson, Kirschner, Boehler and Hockenbush. I want to emphasize the necessity for the accurate introduction of the wire. I was recently called into consultation in a case in which a wire was to be introduced just above the condyles of the femur. Instead, it was introduced into the pouch and was dragged down through the knee joint, with resulting infection. A note of warning should be sounded to men in general practice regarding indiscriminate use of the Kirschner wire, just as in the matter of open reductions and plates. The combination of gas bacillus and tetanus antitoxin should always be at hand. Dr. West mentioned a patient who died of a gas bacillus infection. I am sure that if the combination of these antitoxins is at hand and is given early there will be few cases of gas gangrene. The importance of the posterior sag should be emphasized. Posterior sag in fractures of both bones of the leg produces a disalinement with weight bearing posterior to the os calcis. It is the result of negligence on the part of the surgeon in the course of treatment. I should like to know when Dr. West removes the wire; also how frequently he sees delayed union or nonunion in these fractures. In my experience, fractures of the middle lower third of the leg more frequently go to delayed union or nonunion than any other cases except fractures of the neck of the femur. There is one disadvantage of the wire over the nail in fixed skeletal traction in that one has to use the bow with the wire and leave it outside the cast. For this reason I prefer the Steinmann nail, as used by Orr and Thomson for fixation above and below after obtaining the reduction and incorporating the nails within the plaster, as Dr. West does the wires with their bows, to maintain the position.

DR. W. K. WEST, Oklahoma City: In answer to Dr. Levinthal's question regarding the time the wire is removed, there is no time limit any more than there is a time limit as to when one can remove fixation from the tibia. I think that in the lower leg type usually two weeks is long enough. In the shaft of the tibia they are probably kept on sometimes as long as eight weeks, and then after that, of course, something else is maintaining the position. Regarding the possibility of nonunion, I haven't had nonunion in the cases I have treated, but of course the union is always very slow. After eight or ten or twelve or fifteen weeks, when I decide that it should be united, I take off the appliance. I would just keep it there until union is obtained. In this series, of course, I did not have nonunion. I don't remember ever having any. I make that as a rather broad statement because I know that in many cases there is nonunion in spite of anything one can do. Regarding the argument of some of the general surgeons to the effect that the simple methods of treatment should be returned to, that the wires and bows and wrenches and drills are too complicated and too expensive, I do not think that they are. I think they are a permanent armamentarium and will be used indefinitely. They are not especially expensive. After one uses them a time or two, the technic becomes simple. I think it is also felt that there will be some cases in which this armamentarium is necessary and that there is a way in which many open operations may be avoided.

INCIDENCE AND PREVENTION OF INCISIONAL HERNIAS

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Incisional hernias continue to remain serious surgical problems. Countless procedures have been advocated for the cure of them; numerous suggestions have been offered to prevent them.

It seems reasonable to presume that though considerable time and concentration are utilized in the performance of the operation within the abdomen, often a too hurried and careless closure is effected by a weary operator or an inexperienced assistant.

INCIDENCE

The incidence seems variable according to the reports. In hospitals where many hernias are operated on, incisional hernias are less frequent than other types of ruptures. B. L. Coley,[1] in 3,000 consecutive herniotomies performed at the hospital for the ruptured and crippled in New York, reported only a 1.5 per cent incidence of postoperative hernias. During a four year period (1923 to 1927, inclusive) at the Boston City Hospital[2] there were 304 patients with this condition operated on. Stanton[3] noted 24 postoperative hernias following 500 laparotomies which he performed; all were ascribed to improper union of the fascial layers anterior and posterior to the rectus muscles. Masson[4] cited a 10.8 per cent incidence of incisional hernias in 5,502 cases of hernia at the Mayo Clinic, and found

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Read before the Section on Surgery, General and Abdominal, at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 15, 1933.

1. Coley, B. L.: Three Thousand Consecutive Herniotomies, with Special Reference to Recurrence, Based on 837 Followed Cases, Ann. Surg. **80:** 242, 1924.
2. Hepburn, J. A.: Boston City Hospital Treatment of Postoperative Hernia, New England J. Med. **204:** 1035-1037 (May 4) 1931.
3. Stanton: The Cyclopedia of Medicine, vol. 6, p. 802.
4. Masson, J. C.: Postoperative Ventral Hernia, Surg., Gynec. & Obst. **37:** 14 (July) 1923.

that in a two year period (1928 to 1930) they had operated on 313 patients for this condition.[5] A 5 to 10 per cent incidence is generally conceded in this particular type of herniation in comparison with all other forms of hernia.

In an attempt to determine accurately the incidence at the Roosevelt Hospital over an eleven year period (1922 to 1932, inclusive), it was found that 1,928 hernias had been operated on; of these 120 were incisional hernias, an incidence of 6.02 per cent. During this same length of time there were 5,366 abdominal operations, giving for postoperative hernia in this relationship an incidence of 2.2 per cent. An analysis revealed that the great majority of the hernias were in patients beyond the thirty-fifth year. A conspicuous feature in this series was that over 60 per cent of the hernias developed within two months following the original operation. This is somewhat at variance with the present conception, as most writers on the subject state that postoperative hernias are usually of delayed appearance and gradual development.

As most of the upper right rectus incisional hernias may be expected to follow operations on the gallbladder, I originally thought that retracting the muscle outward would lower the incidence, as this maneuver preserved the nerve supply and caused less destruction of muscle fibers. However, in the present series this was not found to be the case; the muscle-splitting procedure resulted in fewer postoperative hernias. The complication often feared in these wounds in the right upper quadrant is partial or complete disruption.

Twenty-eight postoperative hernias were encountered following lower right rectus incisions; in twenty of these twenty-eight cases appendectomies had been done with drainage, in four the appendix had been removed without drainage, and in four pelvic procedures were carried out. These twenty-four cases in which the appendix was removed represent a rather large incidence when one considers the fact that this type of incision was employed only in doubtful cases.

With patients suffering from acute appendicitis it has been my custom, when a definite diagnosis has been made, to employ as a routine the McBurney incision in preference to the lower right rectus types of approach, for the following reasons: 1. Better drainage is effected. 2. There is less chance of spreading the infection, for it is easier to wall off with moist tail pads through a McBurney incision than through a right rectus incision. 3. It diminishes postoperative herniation. I believe that by utilizing the Weir extension sufficient exposure is possible to remove an appendix, no matter in what location it may be found, or the right tube and ovary and occasionally, in a thin person, the left tube and ovary.

All of the thirty-six cases followed operations for acute appendicitis in which the peritoneum was drained.

Over a ten year period in one surgical division alone 444 patients were operated on for acute appendicitis through a McBurney incision and were followed up; in 162 the wound was drained and in 282 not drained.

On each of these patients there has been a follow-up of from one month to two years; when possible, the cases of drainage have been under observation for a two year period. In no instance has an incisional hernia been detected in the nondrained group, which shows the value of the McBurney incision. On the other hand, in 162 cases in which the wounds were drained twenty-one patients developed definite postoperative incisional hernia, giving an approximate incidence of 12.9 per cent.

During the last nine years I have made it a practice in certain types of cases to leave the wounds entirely open except for closure of the peritoneum snugly about the drain, in order to avoid extensive sloughing of the fascia of the external oblique muscle. In 1921 Pool, at the New York Hospital, began a series of operations in which this idea was fostered. Garlock,[6] in 1929, reviewing this group, reported that "the number of postoperative ventral hernia has been reduced more than half since the practice of avoiding the placing of sutures in muscles, fascia, or skin was adopted." In a series of 162 followed cases at the Roosevelt Hospital

Data on Postoperative Hernia

Anatomic Type	Pathologic Variety	Number of Operations*	Early Operative Deaths	Delayed Operative Deaths after 5th Day Postoperative	Total Number of Deaths	Deaths from Simple Hernias
Upper right rectus	Simple hernia	24	0	0		
	Strangulated hernia	1	1	0	1	0
Lower right rectus	Simple hernia	23	0	1		
	Strangulated hernia	5	0	2	3	1
McBurney	Simple hernia	35	0	0		
	Strangulated hernia	1	0	0	0	0
Lower midline	Simple hernia	16	0	0		
	Strangulated hernia	3	1	0	1	0
Miscellaneous	Simple hernia	11	0	0		
	Strangulated hernia	1	0	0	0	0
Totals		120	2	3	5	1
Mortality rate			1.6%	2.5%	4.1%	0.9%

* Where the procedure of the original operation could be determined it was found that the wound had been originally drained in 64 of the 120 cases and not drained in 11.

I was unable to confirm Garlock's conclusion; an investigation was stimulated by the observation that the great majority of the McBurney incisional hernias followed primary operations in which the wounds had been left open, except for suture of the peritoneum alone.

In the lower midline incision group nineteen cases followed operations on the prostate or the pelvic viscera, done elsewhere or by the general surgeons on the staff.

There were twelve hernias following operations of various kinds, such as cecostomies, recurrent umbilical hernias, nephrectomies and ureterectomies for tuberculosis.

PREVENTION

Etiologic factors should be considered in suggesting measures which I believe lower the incidence of these hernias. The belief is well founded that any wound necessitating drainage of the peritoneal cavity evokes a potential hernia. Views have been advanced that where catgut is used, the rate of absorption or dissolution of the strands varies according to altered chemical reactions in different persons; thus in certain patients the catgut is too promptly deprived of its function, the

5. Masson, J. C.: Prevention and Repair of Hernia in Low Median Line Incisions, Am. J. Obst. **22**: 596-603 (Oct.) 1931.

6. Garlock, J. H.: Appendectomy Wound Repair and Hernia, Ann. Surg. **89**: 282 (Feb.) 1929.

wound separates in the inner layers and an incipient hernia is inaugurated. Widespread is the conception that operative abdominal wounds in patients afflicted with cancer, diabetes and syphilis heal slowly and insecurely; yet if disruption occurs and the wound is carefully resutured how firmly they finally heal!

Infection unquestionably produces a more rapid disintegration of catgut; knots more easily slip apart when

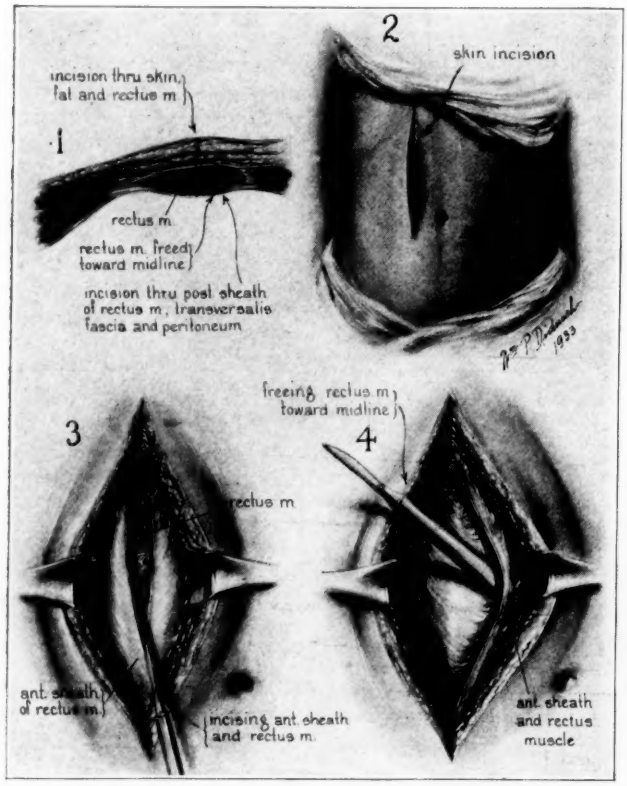

Fig. A.—Drawing showing the various stages in the approach to the right upper quadrant of the abdomen; the left half of the rectus sheath and rectus muscle are pushed far over toward the midline as is shown in *1* and *4*.

bathed by infected serum or frank pus, and a cough, sneeze, hiccup or increased abdominal pressure from whatever cause readily forces a small bit of omentum or even a knuckle of bowel wall up between the edematous, sloughing edges of the peritoneum. Unless interrupted sutures are used the peritoneal wound may be forced open throughout its entire length. In a mildly infected upper right rectus gallbladder incision I have seen on the seventh postoperative day every peritoneal (or anterior rectus sheath) interrupted suture of chromic catgut tear through the medial peritoneal edge under the sudden pressure of a severe cough, and yet not a suture has been found untied or in any manner disintegrating.

With sloughing of large areas of fascia of the external oblique or of the rectus sheath in infected wounds, it is easily understood why herniation so readily follows. To prevent sloughing it is deemed wise to suture only the peritoneum in an infected McBurney wound, and in the infected rectus or midline incisions interrupted sutures, properly spaced, permit of seepage, and the avoidance of excessive tension will mitigate against the embarrassment of the circulation of the tissue layers.

Competent abdominal surgeons less frequently drain the slightly, or even moderately, infected peritoneal cavity. Shipley and Bailey [7] do not employ drainage in acute appendicitis with early peritonitis. They emphasize that "the important things in early peritonitis are not the kind and number of organisms in the peritoneum or the amount or extent of the exudate, but the source of the infection and whether or not the avenue through which the organisms are reaching the peritoneum may be gotten at and closed. If this can be accomplished in the early stages of peritonitis, drainage need not be so widely used as has been practiced." One of their conclusions states the matter clearly: "drains are soon sealed off and do not drain any considerable portion of the peritoneum." By closing cholecystectomy wounds without drainage many incisional hernias have been prevented. I believe, however, that this should not be done always as a routine. To close the wound tight and drain through a stab wound in the right flank serves the twofold purpose of firm closure and drainage; a dog tongue-shaped right lobe of the liver may make drainage by the flank stab wound too circuitous, thus necessitating the use of a drain in the upper angle of the right rectus wound. The wounds of the abdominal wall in practically all operations on

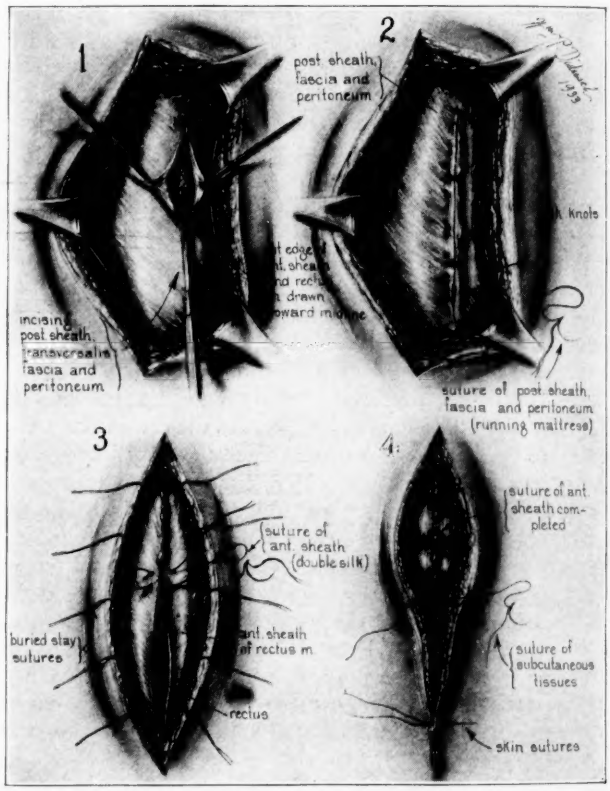

Fig. B.—Drawing showing the incision through the posterior sheath of the rectus muscle, transversalis fascia and peritoneum well over toward the midline in *1*. *2*, *3* and *4* show the method of stay suture of the peritoneum, buried stay sutures for the rectus muscle sheath and interrupted figure-of-eight sutures for the anterior sheath of the rectus muscle.

the stomach are closed without drainage, thus accounting for the relatively few cases of herniation in the left upper quadrant.

Drains should be left in the peritoneal cavity for a minimum period of time. To minimize and sometimes

7. Shipley, A. M., and Bailey, H. A.: Treatment of Appendicitis Complicated by Peritonitis, Ann. Surg. **96**: 537 (Oct.) 1932.

prevent the occurrence of a postoperative hernia, employ the soft cigaret or Penrose drain in preference to glass tubes, rubber tubing or any variety of wrapped tube drain.

The smallest piece of omentum protruding through a pinpoint opening in the peritoneum, either in the line of suture or through a needle tear or slit to the side of either edge, produces a large percentage of postoperative hernias.

To prevent incisional hernias in wounds of the anterior abdominal wall, clean or infected, a meticulously careful suture of the peritoneum, transversalis fascia and posterior sheath of the rectus is of paramount importance. Secure apposition of the cut edges of the transversalis fascia is the keystone to a firmly united wound. A separate suture for this particular muscle fascia layer, if it is well developed, is an added safeguard.

A satisfactory closure of any wound is one wherein anatomic structures are perfectly replaced and held thus by some material which will not interfere with a safe and complete healing. In an actually or potentially infected wound catgut is unquestionably the suture and ligature material of choice, whereas in a clean wound I am convinced that silk has proved itself preferable, for two reasons; first, that a clean wound is less likely to become infected, and second, that fewer postoperative hernias result.

The following procedure in the closure of a clean upper, middle or lower right rectus wound, I feel certain will lower the incidence of, and no doubt at times prevent incisional hernia. In a measure the type of approach to the peritoneal cavity is of importance. A muscle-splitting procedure predisposes to a more firmly healed wound, and particularly does it conform to the closure herein outlined. I prefer the incision through the posterior sheath of rectus, transversalis fascia and peritoneum to be made more medially (from ¾ to 1 inch [2 to 2.5 cm.]) than the incision through the skin, anterior sheath and rectus muscle. The reason is that this layer is thus more easily closed, for the outward pull of the horizontal fibers of the transversalis muscle is strong, and the closer one gets to the midline the less is the chance of pulling and tearing this most important structure. As a rule, the peritoneum, transversalis and posterior sheath of the rectus are closed with eversion of the edges by a running mattress suture which is locked at several points before it is finally tied at the lower angle of the wound. The greatest care is exercised in obtaining a firm bite in the transversalis fascia; to close this structure well with a nonabsorbable suture almost certainly insures against incipient herniation. The next step is to undermine the skin and subcutaneous tissue for a distance of 1½ inches (3.8 cm.) on either side, preparatory to the placing of deep or buried stay sutures of doubled medium-sized silk, as suggested by Heuer; four or five such sutures are placed about 1 inch from the cut of the anterior sheath and rectus muscle and are left untied. Interrupted mattress or figure-of-eight sutures then firmly close the anterior rectus sheath. The buried stay sutures are pulled taut and carefully tied, each suture including anterior rectus sheath and rectus muscle. Fine properly spaced interrupted sutures approximate the subcutaneous tissue, and interrupted sutures close the skin.

I believe that of wounds in the lower part of the abdomen, aside from the clean McBurney incisions, one made in the midline from the umbilicus to the symphysis offers more in the prevention of incisional hernia than one in which a small strip of rectus muscle is preserved, for surely this strip of muscle atrophies and leaves an area of weakness where herniation is likely to occur.

In the gynecologic service of the Roosevelt Hospital postoperative hernias occur rarely, owing primarily to few drained wounds and utilization of Pfannenstiel's incision; however, where midline incisions are used, great care is exercised in exposing the muscle at the time of closure and in suturing like structures by layers. In any noninfected wound in the lower third of the abdomen, where the muscles appear friable and the fascia itself is thin, an imbrication of the fascial layer by means of a running suture of living or dead (ox) fascia will guarantee a solidly healed wound.

In those unfortunate patients in whom a repaired incisional hernia recurs, sutures of either living fascia or the ox fascia of Koontz are often indicated, even at the primary operation. I have found that ox fascia soaked in warm saline solution for two hours prior to using it provokes scarcely more reaction of tissues than strips of living fascia lata, and I consider it necessary in suture equipment, in fact useful in the repair of any form of rupture. Insistence that every obese or debilitated person with an incisional hernia undergo a proper preoperative preparation will lessen the chance of recurrence.

SUMMARY

Incidence.—Over an eleven year period at the Roosevelt Hospital (1922 to 1932, inclusive) there were 1,928 hernias operated on. Of these, 120 were incisional hernias, an incidence of 6.02 per cent. An analysis of the 120 postoperative hernias showed that the great majority were in patients beyond the thirty-fifth year. Over 60 per cent of the hernias developed within two months following the original operation. In the right upper rectus incisions retraction of the muscle outward resulted in more incisional hernias than occurred in the muscle-splitting procedures. In the intermuscular incision group thirty-six incisional hernias followed operation for acute appendicitis in which the peritoneum was drained. In a follow-up group of 444 patients operated on for acute appendicitis through the McBurney incision the peritoneal cavity was drained in 162 and not drained in 282. Of the 162 patients in whom the wounds were drained, twenty-one developed definite postoperative incisional hernias, giving an approximate incidence of 12.9 per cent in this group. I do not agree with Garlock's contention that there are fewer postoperative hernias following suture alone of the peritoneum in the drained McBurney wounds.

Preventive Measures.—1. Drainage of the peritoneal cavity is employed less frequently by competent abdominal surgeons. Cholecystectomy wounds are closed tightly. Where indicated one should employ stab wound drainage through the right flank. The drains are left in the wounds for a minimum period of time. Cigaret drains are preferable.

2. Suture of the peritoneum and transversalis fascia in the upper third of the abdomen is the most important step in the closure of any wound. In the lower third of the abdomen imbrication should be done with running sutures of live or dead (ox) fascia.

3. Where possible all wounds are sutured by layers. Excessive tension is avoided.

4. Fascial repair is done in every case of recurrent incisional hernia.

5. Patients suffering from systemic disease should undergo careful preoperative rehabilitation.

6. The use of silk is preferred throughout in the closure of clean wounds.

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ABSTRACT OF DISCUSSION

DR. AMOS R. KOONTZ, Baltimore: I am especially interested in what Dr. Cave had to say about the use of silk in the closure of clean wounds. Silk has two advantages. First, it is not absorbed and therefore can be depended on to stay where it is placed until firm healing is secured. Second, there is very little reaction in the tissues around the silk sutures. The one big disadvantage of silk is that in the presence of infection it acts as a foreign body, and a sinus forms and persists, going down to the offending suture until the suture works its way out or is removed by the surgeon. This single disadvantage of silk is far outweighed by its advantages. Infections in clean wounds are now so rare as to be almost entirely negligible. On the other hand, what are some of the experiences with catgut? The chemicals with which catgut is treated in preparation cause a moist reaction in the tissues and a type of healing not nearly so firm as that obtained after suture with silk. Every one who has used much catgut has seen abdominal wounds break open two or three weeks after operation and the patient temporarily disemboweled. I have never seen that happen with silk. Another important point is the preoperative preparation of obese persons before attempting a cure for a postoperative hernia. Excessively obese persons should be put on a rigid diet and have their weight materially reduced. A great deal of the excess fat of obese persons is carried in the omentum. This increases intra-abdominal pressure. Besides, the fat in the abdominal wall weakens that structure, and both these factors militate against a cure of the hernia. Dr. Cave makes it a practice to soak ox fascia in physiologic solution of sodium chloride for two hours before operation. This is an excellent practice, as it is highly desirable to get all the alcohol removed before the fascia is implanted. One very important point in the operation for postoperative hernia, especially when fascia strips are used, is the question of drainage. Most of these patients are more or less obese, and a very extensive dissection is necessary in order to free the fascia in all directions from the large defect. If these wounds are not drained, a certain amount of serum almost invariably collects and tends to soften the tissues and delay healing. If the wounds are drained through an opening in the operative incision, secondary infection almost invariably ensues. My practice has been to use cigaret drains through stab wounds in the flank. These drains may be removed in from three days to a week and they keep the operative site absolutely dry, thus promoting firm and secure healing.

DR. ROBERT L. PAYNE, Norfolk, Va.: The ideal closure of an abdominal incision should include three factors: first, the approximation of every separate and distinct layer; second, total and complete obliteration of all dead spaces; third, the consummation of the first two points without tension on the blood and nerve supply of the tissues. I subscribe to the author's view that all ventral hernias begin from the inside out and that the most important structure of all those in the abdominal wall to coaptate properly is the transversalis fascia or the posterior sheath of the rectus. If this is properly approximated and held, the other structures will not separate. I believe that we are eventually going back to the procedures of our fathers and close all wounds with interrupted sutures. I believe that silkworm-gut through and through with careful separate coaptation of all the layers and with whatever material the individual operator prefers will give the best result. I cannot subscribe to the author's views regarding the use of silk. The first three years of my professional life I spent pulling out silk suture knots that were used in the hospitals where I worked. I never put in silk except in overlapping the full thickness of the abdominal wall and then only after boiling that silk on three consecutive days. One of the best procedures for the protection of the patient against the occurrence of an incisional hernia is careful supervision after operation and providing for thorough and consistent postoperative narcosis. I mean by that that morphine or some other form of narcosis should be used freely enough to prevent those mechanical factors that contribute so much to incisional hernia from cutting of the tissues by sutures in the first four or five days after operation.

DR. GEORGE A. HENDON, Louisville, Ky.: I set about trying to find a simple way to close incisional hernias and to eliminate mortality. I chose a method by which I could perform the operation without opening the peritoneal cavity unless there was a specific reason to do so. When this was done the opening was immediately closed. I proceeded on the basis, which is an essential and vital factor in all plastic surgery, of obtaining contact without tension. I also realize the importance of the principle in plastic surgery that, other things being equal, the chances of success are in proportion to the area of fresh surfaces that are brought into contact. Therefore, the problem is to increase the area of contact and reduce the degree of tension. For that purpose the superficial abdominal fascia around the hernia protrusion is exposed for at least an inch from the margin of the ring. A suture is started as far back as possible and is carried through the fascia to emerge about one-fourth inch from the margin of the ring. The needle is then made to jump over the hernia opening and is again started into the fascia about one-fourth inch from the margin of the ring and emerges from the fascia as far back as the exposure will allow. A mattress suture may be used if one wishes to do so. When the sutures thus introduced are tied, there is a shelf of tissue turned inside the abdomen which divides the tension and increases the area of surfaces in contact. Pressure on the shelf will push it against the inner surface of the abdomen and tend to strengthen the closure. One thus avoids the morbidity, shock and danger incident to the opening of the peritoneal cavity. There is no danger of including the intestine in the suture line, because it is pushed away when the peritoneal and transversalis fascia is turned in. I often use this method of closure in the primary operation.

MEDICINAL TREATMENT OF THE COMMON COLD

HAROLD S. DIEHL, M.D.

MINNEAPOLIS

Although the public takes more medication for colds, both on prescription and without prescription, than for the treatment of any other illness, little of real significance has been written concerning the treatment of colds. The Thomsons,[1] in their exhaustive review of over 2,000 papers on the common cold, devote only about five out of 700 pages to the subject of general medicinal treatment and then conclude concerning the various drugs which they mention that "no doubt all of these are of some value. Nevertheless, they frequently fail to produce the desired effect so that one cannot be by any means certain of their efficiency." In view of such knowledge, it seems like distinct temerity to suggest that certain well known drugs are of definite value in the treatment of colds; but this is what it seems one must conclude, tentatively at least, from the results of a controlled study of the treatment of colds which has been in progress for approximately a year at the Students' Health Service of the University of Minnesota.

Read before the Minnesota Society of Internal Medicine, Nov. 13, 1933.

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From the Students' Health Service and the Department of Preventive Medicine and Public Health of the University of Minnesota.

1. Thomson, David, and Thomson, Robert: The Common Cold, Annals of the Pickett-Thomson Research Laboratory, London, Baillière, Tindall & Cox, and Baltimore, Williams and Wilkins Company **8**, 1932.

The reason for inaugurating this study was the consistently good results I obtained in the treatment of my own colds with morphine.[2] A one-fourth grain (16 mg.) tablet by mouth at bedtime on two consecutive nights was the usual dosage taken, although on several occasions complete relief followed a single dose. It was in order to determine whether similar results would occur in other persons that the study was undertaken.

EXPERIMENTAL PROCEDURE

The agency through which this study is being conducted is the dispensary of the Health Service of the University of Minnesota, to which students come for medical advice and treatment. The following bulletin to the physicians of the Health Service Staff will explain the procedure followed in the study:

A STUDY OF THE TREATMENT OF COLDS

As explained at the staff meeting on Nov. 2, 1932, it is proposed to determine the therapeutic value or lack of value of a certain drug which gives some indication of being useful for the treatment of acute head colds.

The plan to be followed is this: select for this study students who have acute coryza, preferably of one or two days' duration. Tell these students about the study and explain that we will be glad to give them the medication which we are trying if they will report what effects, if any, they observe. Unless students are willing to report results, do not include them in this group.

The nose and throat of each student who is to receive this medication should be examined and notes made on the student's dispensary record as to symptoms, date of onset of cold, and objective findings. A prescription giving the student's name, address, and weight should then be written for "Cold Medication." The pharmacist will fill this prescription according to directions. With the medication the student will receive a card upon which to report results, but in addition to this report he should be requested to return to the Health Service in two or three days for another inspection of the nose and throat. At this time the examining physician's impression as to whether or not there has been improvement objectively should be recorded.

The instructions to the pharmacist were to fill these "cold prescriptions" alternately with cold medication A and cold medication B. Cold medication A consisted of morphine sulphate in the following dosage: weight less than 100 pounds, (45.5 Kg.) 1/8 grain (8 mg.) at bedtime; weight 100 to 149 pounds (45.5 to 67.6 Kg.) 1/6 grain (10 mg.) at bedtime; weight 150 pounds (68 Kg.) or more, 1/4 grain (16 mg.) at bedtime. Cold medication B consisted of lactose tablets of the same size, shape and color as the morphine tablets. The directions issued with the lactose tablets were the same as with the morphine. Two tablets were given on each prescription with the following directions: "Take one tablet, and only one, with water before retiring. If symptoms of cold are present the following evening, take the second tablet. Do not give either of these to any one else." No instructions were given in regard to diet, rest, hot baths, gargles and the like. The box containing the tablets was enclosed in an envelop in which was printed the instructions given in figure 1.

DETERMINATION OF RESULTS

The card for reporting results which was filled out by the person who received the medication is shown in figure 2.

2. Morphine was first used by the author to treat a cold merely as a substitute for powder of ipecac and opium (Dover's powder), but reference to prior use of this drug in colds is given by the Thomsons, who quote Watson as follows: "The treatment I find most useful is a single dose of morphine, gr. 1/6, made up with a little capsicum and ol. menth. pep. (a small dose of nitroglycerin is also advantageous), in two hours 10 grains of aspirin and a hot bath. The following morning a purgative dose of magnesium sulphate is given to clear away the intestinal contents held back by the morphine."

When these report cards were returned they were checked for accuracy with the physician's notes on the dispensary record and classified as to type of cold and as to results of treatment. Classification as to type of cold was into one of the following groups: (1) acute coryza, i. e., colds of not more than four days' duration with serous discharge from the nose and with or without sore throat, headache, fever or other symptoms; (2) subacute or chronic head colds, i. e., colds with mucopurulent nasal discharge or with a serous discharge of more than four days' duration; (3) influenza, i. e., acute infections of the upper respiratory tract characterized by headache, fever and general aching but without nasal discharge; (4) pharyngitis, i. e., a sore throat, with or without fever, headache, and the like but without nasal discharge; (5) other acute respiratory infections.

COLD MEDICATION

You will find enclosed some medication for the treatment of your cold. Our experience indicates that certain prescriptions which we are using are beneficial to most people but we want to check this carefully and request that you assist us in so doing by reporting results critically, favorable or unfavorable, on the card which will be sent to you in a few days thru the University mail.

After filling in the card, return it to the Health Service thru the University mail.

If you should fail to get relief by the time that you have taken all of this medicine please return to the Health Service for a different prescription. If relief is obtained with this medicine but symptoms recur, return for a refill of the same prescription.

Fig. 1.—Instructions to patients.

Any classification such as this based on symptoms is, of course, subject to inaccuracies, for an acute respiratory infection may be a pharyngitis today and a rhinitis, laryngitis, tracheitis or bronchitis tomorrow. Furthermore, coryza is a frequent complication of various respiratory infections such as influenza and pharyngitis. This tends to make the acute coryza group somewhat heterogeneous; but since, as the report will show, the inclusion of cases that were primarily influenza or pharyngitis tends to diminish rather than increase the proportion of good results, the classification will serve reasonably satisfactorily for these purposes.

Name.....

Date of beginning of cold.....

Symptoms before taking medicine:—watery discharge from nose:—sore throat—thick yellow discharge from nose—headache—fever—general aching (check)

Other.....

Date of first taking medicine:—.....

Condition next day (Note marked change)

.....

Was medicine taken on this day?.....

Condition on following day.....

Impressions as to effectiveness of treatment; i. e., did this cold run its usual course; if not, in what way was it different?

Fig. 2.—Card for reporting results of medication.

The cards reporting results were rated as indicating "definite improvement," "questionable improvement" or "no improvement." The ratings were made by me and independently by another physician without either of us knowing what medication had been given to the person making the report. Finally, the report from the pharmacist was obtained and the medication given to each patient was recorded.

These ratings, of course, represent merely the combined judgment of two physicians as to whether or not distinct improvement occurred immediately after treatment. No attempt was made to judge whether the

improvement, if any occurred, was the result of the medication, because the inclusion of a control group served to indicate how much improvement should be considered as due to spontaneous recovery. Some unselected examples of reports which were rated as showing "definite improvement," "questionable improvement" and "no improvement" are as follows:

DEFINITE IMPROVEMENT

1. First day, "very little change"; following day, "much better."
2. First day, "much improved"; following day, "all symptoms relieved."
3. First day, "improvement noticeable"; following day, "cold about gone."
4. First day, "better"; following day, "cold much relieved and almost gone."
5. "Complete cure," after first dose.

QUESTIONABLE IMPROVEMENT

1. First day, "cold was worse"; second day, "a little better." Comment: "The cold seem to disappear in a day or two less than usual."
2. First day, "no marked change"; second day, "slight improvement."
3. First day, "no marked change, headache gone"; second day, "a little better, voice clearer."
4. First day, "general aching eliminated perceptibly, other symptoms continued."

NO IMPROVEMENT

1. First day, "no improvement"; second day, "usual improvement."
2. First day, "no noticeable change, throat still sore"; second day, "about same as first day."
3. First day, "no improvement;" second day, "no change: cold ran usual course."
4. First day, "no better"; second day, "about the same."

As will be seen from these illustrations, there could be no question about the ratings that should be given to most reports. A few, however, are borderline and probably would be rated differently by different individuals. This might make some difference in absolute percentages of favorable and unfavorable results but, since the ratings were given without knowledge as to the medications received, it is probable that the differences between the results with the various medications would remain practically the same no matter by whom the ratings were given.

In figure 3 it will be seen that the proportion of reports rated as "questionable improvement" tends to increase as the proportion rated "definite improvement" decreases. This probably is due to the fact that some improvement usually occurs from day to day in the regular course of acute colds and, since many students had heard favorable reports of the treatment, there was a tendency for them to report the usual progress of the cold as "slight improvement." For this reason only reports rated as "definite improvement" are considered of much significance.

MEDICATIONS STUDIED

Although this study was instigated for the purpose of determining whether morphine is of value in the treatment of acute colds, the scope of the investigation was extended as soon as it became evident that this question could be answered in the affirmative. Codeine, papaverine, dilaudid (dihydromorphinone hydrochloride) and powdered opium were tried in the hope that they might prove more beneficial and less toxic than morphine.

The combination of codeine and papaverine was introduced with the thought that the codeine and the papaverine might be effective in different individuals. Dilaudid and papaverine were combined on the suggestion of Dr. Raymond Bieter, associate professor of pharmacology, that papaverine might reduce the toxicity of the dilaudid. Later, papaverine was used in combination with morphine for the same reason.

TABLE 1.—*Medications Studied and Dosages Used for Persons Weighing 150 Pounds*

Medication	Dosage	Directions
Morphine sulphate	¼ grain tablets	1 at bedtime
Lactose	Small tablets	1 at bedtime
Codeine sulphate	1 grain tablets	1 at bedtime
Papaverine hydrochloride	½ grain capsules	1 in a.m.; 1 in p.m.; 3 at bedtime
Codeine-papaverine (1)	¼ grain codeine with ¼ grain papaverine	1 in a.m.; 1 in p.m.; 3 at bedtime
Codeine-papaverine (2)	¼ grain codeine with ½ grain papaverine	1 in a.m.; 1 in p.m.; 2 at bedtime
Dilaudid (1)	1/48 grain capsules	1 in a.m.; 1 in p.m.; 4 at bedtime
Dilaudid (2)	1/18 grain capsules	1 in a.m.; 1 in p.m.; 3 at bedtime
Dilaudid (3)	1/75 grain capsules	1 in a.m.; 1 in p.m.; 3 at bedtime
Dilaudid (4)	1/100 grain capsules	1 in a.m.; 1 in p.m.; 4 at bedtime
Dilaudid-papaverine (1)	1/75 grain dilaudid with ¼ grain papaverine	1 in a.m.; 1 in p.m.; 3 at bedtime
Dilaudid-papaverine (2)	1/75 grain dilaudid with ½ grain papaverine	1 in a.m.; 1 in p.m.; 2 at bedtime
Acetylsalicylic acid-acetphenetidin-caffeine	3½ grains acetylsalicylic acid, 2½ grains acetphenetidin, ½ grain caffeine	1 in a.m.; 1 in p.m.; 3 at bedtime
Powder of ipecac and opium (1)	2½ grain capsules	1 in a.m.; 1 in p.m.; 3 at bedtime
Powder of ipecac and opium (2)	5 grain capsules	1 after lunch; 3 at bedtime
Opium powder	½ grain capsules	1 after lunch; 3 at bedtime
Sodium bicarbonate	10 grain capsules	3 after each meal; 4 at bedtime
Acetylsalicylic acid	5 grain capsules	1 every 2 hours first day and three times a day thereafter
Morphine-papaverine	1/16 grain morphine with ½ grain papaverine	1 in a.m.; 1 in p.m.; 2 at bedtime

Several other drugs extensively used in the treatment of colds, viz., powder of ipecac and opium, acetylsalicylic acid, sodium bicarbonate, and acetylsalicylic acid-acetphenetidin and caffeine were added to the list of medications studied in order that their effectiveness might be evaluated in relation both to the control tablet and to the other drugs used. A complete list of the drugs studied and the dosages used for persons of average size is given in table 1.

TABLE 2.—*Reports Not Returned and Reports Discarded*

	Number Not Reporting	Percentages Not Reporting (of Totals Who Received Medication)	Number Discarded	Percentages Discarded
Morphine	27	8.1	26	9.1
Lactose	28	12.3	17	9.5
Dilaudid	2	1.9	8	7.8
Codeine	13	9.2	9	7.3
Powder of ipecac and opium	1	1.2	5	6.2
Acetylsalicylic acid-acetphenetidin-caffeine	2	2.7	4	5.8
Opium powder	0	0.0	2	4.9
Dilaudid-papaverine	1	1.0	4	4.2
Codeine-papaverine	9	2.9	8	2.8
Sodium bicarbonate	2	3.5	1	1.7
Acetylsalicylic acid	6	10.0	1	1.7
Papaverine	5	7.1	1	1.5
Morphine-papaverine	0	0.0	0	0.0
	96	5.9	86	5.8

Perhaps I should add that before any new drug combination was prescribed for students it was taken, in

larger dosage than was eventually used, by me and frequently also by other members of the health service staff.

REPORTS NOT RETURNED OR NOT RATED

Students who failed to report results within a week were sent follow-up notices with urgent requests for a report. As shown in table 2, a small percentage of students failed to respond even to these notices. Most of the failures, however, occurred early in the study or during examination or vacation periods.

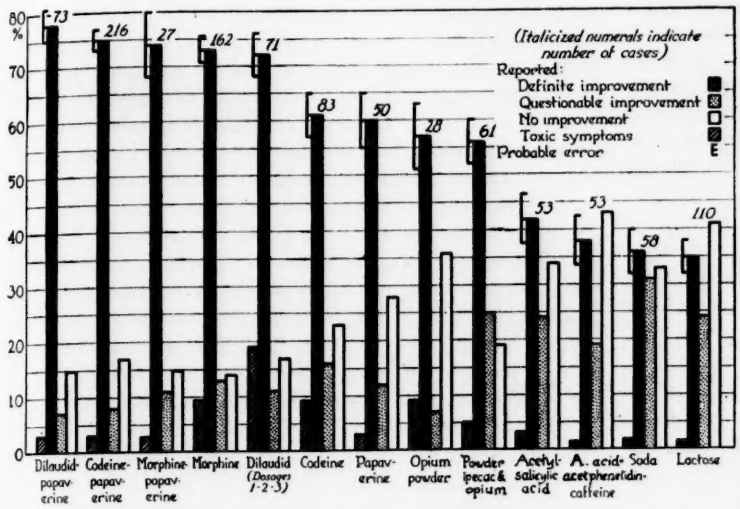

Fig. 3.—Various drugs in the treatment of acute coryza.

Of the reports received, eighty-six were discarded without ratings because of one of the following shortcomings: The medication had not been taken in accordance with directions; the medication was discontinued because of toxicity; the statements on the report card were too ambiguous for classification or the infection was in the lower rather than in the upper respiratory tract. Table 2 shows the numbers and percentages of reports discarded.

The relatively large proportion of reports discarded from persons who had received the morphine and lactose tablets is due to the fact that at the beginning of the experiment only one dose of the drug was given with instructions to return the following day to report results and to receive a second dose, However, because of the considerable proportion of patients who failed to return for the second dose, this plan was soon replaced in favor of the one that has been described. It will be noted also that the proportion of unsatisfactory reports is higher for the drugs which proved to be most toxic.

Although it would have been highly desirable to have all reports returned and rated, it is unlikely, in view of the distribution of the missing and discarded reports, that the results would have been much different had this been possible.

TOXIC EFFECTS OF THE DRUGS USED

A record was kept of all students who reported symptoms which they considered toxic effects of the drugs they had taken. The most common of these symptoms were nausea, vomiting, dizziness, "dopey feeling" and faintness or actual fainting. Fainting was reported to have occurred most frequently on rising in the morning after having taken the medicine the night before.

Constipation and diarrhea, the frequency of which is indicated by the following percentages, were not considered as significant toxic symptoms: constipation was reported after morphine by 2.6 per cent of the subjects, after codeine by 1.7 per cent, after opium powder by 4.6 per cent, after sodium bicarbonate by 4.2 per cent, after acetylsalicylic acid by 3.3 per cent, after dilaudid-papaverine by 2.1 per cent, after codeine-papaverine by 2.4 per cent, and after lactose by 1.2 per cent. Diarrhea was reported after morphine by 1.1 per cent, after opium powder by 2.3 per cent, after dilaudid-papaverine by 1 per cent, and after codeine by 1.7 per cent.

The frequency with which toxic effects were reported after the various drugs is shown in table 3. In considering this, allowance must be made for the fact that some of these symptoms, such as those reported after lactose, were caused by the infection and not by the medications that had been taken.

RESULTS IN ACUTE CORYZA

As previously stated, our so-called acute coryza group includes all persons who reported symptoms of a "watery discharge from the nose" and whose symptoms had not been present more than four days before treatment. Certainly most of the persons in this group had primary acute coryza, but in some cases the coryza was secondary to pharyngitis or influenza (grip). The results obtained with the different medications in this group of cases are shown in figure 3.

The percentages of individuals who reported definite improvement or complete cure of their colds within from twenty-four to forty-eight hours after taking morphine, dilaudid, codeine-papaverine, dilaudid-papaverine and morphine-papaverine are essentially the same, the differences in percentages of good results being without significance.[2a] Codeine papaverine, dilaudid-papaverine and apparently morphine-papaverine, however, are preferable to morphine or dilaudid alone, because of their being distinctly less toxic (table 3).

TABLE 3.—*Toxic Symptoms Reported*

	Total Reports Received	Percentage Reporting* Vomiting	Nausea Without Vomiting	Faintness or Fainting	Severe Headache	"Dizzy or Dopey Feeling"	Percentage of Total Reporting Symptoms†
Dilaudid, dosages 1, 2, 3.	99	4.0	9.1	0.0	1.0	5.1	19.2
Morphine	279	2.6	3.7	1.4	0.4	1.1	9.4
Codeine	118	0.0	2.5	1.7	2.5	1.7	9.3
Opium powder	43	2.3	2.3	2.3	0.0	2.3	9.3
Powder of ipecac and opium	78	2.5	1.3	0.0	1.3	0.0	5.1
Acetylsalicylic acid	60	0.0	0.0	0.0	0.0	3.3	3.3
Papaverine	65	0.0	1.5	0.0	1.5	0.0	3.1
Dilaudid-papaverine	97	0.0	1.0	0.0	0.0	2.1	3.1
Codeine-papaverine	288	0.0	0.7	0.3	0.7	1.4	3.1
Morphine-papaverine	35	0.0	0.0	0.0	0.0	2.9	2.9
Sodium bicarbonate	58	0.0	1.9	0.0	0.0	0.0	1.9
Lactose	178	0.6	0.0	0.0	0.6	0.6	1.7
Acetylsalicylic acid-acetphenetidin-caffeine	68	0.0	1.5	0.0	0.0	0.0	1.5

* Only the one symptom which seemed most outstanding in each case was tabulated.

† In making up these totals, constipation and diarrhea were not considered as toxic symptoms.

2a. Some of the improvement after each of the medications is of course spontaneous and not the result of the treatment.

Codeine-Papaverine.[3]—One hundred and sixty-one of the 216 individuals, 75 per cent, who took the codeine-papaverine combination for acute coryza, reported definite improvement or complete cure in from twenty-four to forty-eight hours. This is 14 per cent more than reported similar results from codeine alone, and 19 per cent more than from papaverine alone. With such differences, the odds are 45 to 1 that the codeine-papaverine combination is more beneficial than codeine alone, and 79 to 1 that the same combination is more beneficial than papaverine alone.[4] Codeine and papaverine were tried together in several proportions and dosages, the chief of which are shown in table 1 as dosages 1 and 2. The difference in the percentages of good results with these two dosages, however, 74 and 76 per cent, respectively, is not sufficiently great to be of significance. Hence the smaller dosage, ¼ grain of codeine with ¼ grain of papaverine, is now in use. The specific directions given with this codeine-papaverine combination to persons of various weights are as follows:

75 to 99 pounds: 1 after breakfast; 2 at bedtime.

100 to 129 pounds: 1 after breakfast; 3 at bedtime.

130 to 169 pounds: 1 after breakfast; 1 after lunch; 3 at bedtime.

170 pounds and over: 1 after each meal and, depending on weight, 3 or 4 at bedtime.

The change most frequently observed by persons who reported improvement was a prompt decrease or a complete disappearance of the nasal discharge and congestion. In many cases relief of the coryza was permanent following the first dose of the medicine, and even when there was a recurrence of congestion or discharge between doses the relief that followed the medication lasted for several hours. Furthermore, although the excessive secretion was controlled, the unpleasant dryness that usually occurs when atropine is taken for this purpose was not experienced. The pharyngitis, laryngitis and tracheitis that occur with certain colds were not materially affected by the medication. The relief of the coryza, however, very definitely reduced the discomfort and incapacity and in most cases seemed practically to eliminate the protracted period of mucopurulent discharge. This was particularly noticeable when the medication was taken at the very beginning of symptoms.

Unpleasant symptoms, such as nausea, dizziness, headache and fainting, were infrequent following the codeine-papaverine combination (table 3).

When one is prescribing derivatives of opium, a question as to the danger of habituation naturally arises. Concerning addiction to papaverine, New and Nonofficial Remedies[5] says that "its toxicity is low, and neither tolerance nor habituation has been reported." Addiction to codeine may occur, but it is so rare that Wolff[6] states that "codeine is not practically dangerous from the point of view of habituation and, like papaverine, does not come under the German opium law." Furthermore, the use of these drugs for the treatment of colds is occasional and for only short periods of time. Hence it would seem that one need have no concern in regard to habituation when using this drug combination for the treatment of acute colds.

Dilaudid-Papaverine.—The results obtained with dilaudid-papaverine were practically identical with those reported for codeine-papaverine, the differences that appear in figure 1 being too small to be of significance. In at least two cases, however, dilaudid-papaverine gave prompt and permanent relief after the codeine-papaverine combination had produced only temporary improvement. Whether or not one of these combinations will tend to be effective in any considerable number of cases when the other is ineffective is being investigated. The proportion of patients who reported "definite improvement" after the dosages of dilaudid-papaverine (shown in table 1) were 77 and 80 per cent, respectively, a difference not sufficiently great to be significant. The specific directions given to the several weight groups for the use of the dilaudid-papaverine combination are the same as for the use of the codeine-papaverine combination.

The proportion of patients who reported toxic results after dilaudid-papaverine was approximately the same as after codeine-papaverine. The total incidence of toxic symptoms after dilaudid-papaverine, however, was only about one sixth as great as after dilaudid alone. These results, as well as those with the codeine-papaverine and morphine-papaverine combinations, strongly suggest that papaverine may be effective in reducing the toxicity of morphine, codeine and dilaudid. The danger of habituation from the dilaudid-papaverine combination in the dosage used is certainly negligible if not absolutely nil.

Morphine-Papaverine.—The number of cases treated with this combination is too small to justify generalizations, but since the results with it are no better than with codeine-papaverine or dilaudid-papaverine, there does not seem to be any reason for continuing its use. The toxic effects from the morphine-papaverine combination appear to be distinctly less than those from morphine alone.

Morphine.—This drug, with which our study was started, is apparently of definite value in the treatment of acute coryza. However, the larger proportion of toxic results after it and the hesitancy of physicians to prescribe morphine because of the danger of addiction make it less desirable for extensive use than the several combinations already discussed.

Dilaudid (dihydromorphinone hydrochloride).—Beneficial results with dilaudid alone, in the larger dosages used, were approximately as frequent as with the other effective drugs or drug combinations, the proportions of "definite improvement" reported after dosages 1, 2, 3 and 4 (table 1) being 76, 69, 65 and 47 per cent, respectively. However, the large proportion of unpleasant effects after dilaudid (table 3) caused its discontinuance in favor of the less toxic combination of dilaudid with papaverine.

Concerning the dangers of habituation to dilaudid, Wolff[6] says that "it has been shown both experimentally and clinically that it leads more slowly to habituation and addiction than morphine and its devotees are therefore more easily cured."

3. A patent application has been filed to enable the University of Minnesota to control the preparation and sale of the new drug combinations indicated by this study to be of value in the treatment of the common cold. Specifically these combinations are codeine with papaverine, dilaudid with papaverine, and morphine with papaverine. It is not intended, however, that this patent shall interfere with the use of these drugs in the compounding of prescriptions written by physicians for their patients.

4. Pearl, Raymond: Medical Biometry and Statistics, Philadelphia, W. B. Saunders Company, 1933.

5. New and Nonofficial Remedies, Chicago, American Medical Association, 1933, p. 307.

6. Wolff, Paul: Drug Addiction: A World-Wide Problem, J. A. M. A. 98: 2175 (June) 1932.

Codeine.—Codeine is evidently of definite though less value than morphine in the treatment of acute coryza. Toxic effects after codeine were just as frequent as after morphine.

Papaverine.—Papaverine, which seems to be practically nontoxic, gives approximately the same proportion of good results as codeine (57 per cent of fifty-two cases and 61 per cent of eighty-three cases, respectively).

Powder of Ipecac and Opium.—This powder, consisting of 10 per cent powdered opium and 10 per cent powdered ipecac, seems to have been first proposed for the treatment of colds by Dover,[7] an English physician, in the seventeenth century. For many years it was extensively used, but pharmacists state that recently it has been almost completely replaced by the more actively promoted antipyretics, alkalis and the like. However, Cecil,[8] in his book on colds, recommends powder of ipecac and opium as the medication of choice in the general treatment of colds.

The dosage in which powder of ipecac and opium was first used in this study was that ordinarily prescribed by physicians (dosage 1, table 1). Later the dosage was increased (dosage 2, table 1), so that the amount of available morphine which it contained was approximately the same as the amount of morphine that was being prescribed when morphine was given alone. With the larger dosage, however, there was no significant improvement in results, "definite improvement" being reported after dosages 1 and 2 by 54 and 58 per cent of cases, respectively.

The results (figure 3) with this time-honored remedy indicate that it has real merit. However, since powdered opium alone gives as good results as the powder of ipecac and opium, it would seem that its value lies in the ability of the opium to relieve the nasal congestion and secretion and not, as commonly supposed, in the stimulation of secretions and sweating produced by the combination of the opium and ipecac.

A few individuals reported nausea and vomiting following the powder of ipecac and opium, but the percentage of these was small.

Opium Powder.—Powdered opium was tried in order to compare the results with it to those obtained with morphine and with powder of ipecac and opium. The dosage of opium used was such that it contained approximately the same amount of available morphine as that administered when morphine was used alone. This also was the same amount of opium as was contained in the larger dosage of powder of ipecac and opium.

The percentage of persons reporting "definite improvement" with the powdered opium was less than with morphine, but the same as with powder of ipecac and opium (fig. 3). Why opium should be less beneficial than morphine or morphine-papaverine or codeine-papaverine is not clear, although it is possible that smaller proportions of these alkaloids are absorbed when opium is used than when the alkaloids are taken separately.

The proportion of toxic symptoms from the opium was the same as from morphine or codeine but greater than from the codeine-papaverine combination. The possibilities of addiction to opium are too well understood to need comment, but certainly there is no danger of developing habituation when the drug is used as it was in this study.

Lactose.—It seemed essential at the beginning of this study to have reports from a series of patients who thought they were taking some presumably effective medication but who in reality received no medication whatever. For this purpose tablets and capsules of lactose were employed. The proportion of good results (35 per cent) reported after lactose is indicative of the spontaneous improvement in acute colds for which any medication that happens to be taken is given credit. It is because this percentage is so large that it is possible to convince the public that practically any preparation is of value for the prevention or treatment of colds. In fact, some of the comments that were made on the report cards by persons who had received only lactose tablets would serve admirably as testimonials concerning the value of these tablets for the treatment of colds.

It would have been desirable, of course, to continue this control group throughout the year, but after reports from a hundred patients had been received we did not feel justified in continuing it further.

UNIVERSITY OF MINNESOTA—STUDENTS' HEALTH SERVICE

Name.....

Will you be good enough to answer a few more questions in order to help us to determine the value of the medication which you received for a cold on.....? These questions are:

1. How many days or half days were you absent from classes or work because of this cold?
   (a) before treatment.....days. (b) after treatment .....days.
2. Did you "stay in" any other time over a week-end or holiday because of this cold?
   (a) before treatment.....days. (b) after treatment .....days.
3. What was the approximate total duration of this cold? .....days.
4. Did you observe any unpleasant effects which seemed to be due to the medication, such as diarrhea, constipation, etc? If so, what?

After filling in the answers to the above questions, please drop this card in the University mail.

If you received treatments for colds, other than the one noted above, additional cards will be sent you.

H. S. DIEHL, M.D., Director

Fig. 4.—Follow-up report on results of treatment.

Acetylsalicylic Acid-Acetphenetidin-Caffeine.—The proportion of persons (37 per cent) who reported beneficial results from this drug combination is not significantly greater than that reporting benefit from the sugar capsule. A few stated that headache was relieved but that other symptoms continued unchanged. The majority, however, seemed to get no benefit whatever.

Acetylsalicylic Acid.—Because acetylsalicylic acid is so widely used in the treatment of colds, it was tried alone. The proportion of good results (42 per cent), however, was not significantly greater than that with the sugar capsule.

Sodium Bicarbonate.—During the past few years the so-called alkalization treatment of colds, by means of sodium bicarbonate, other mild alkalis or citrus fruits, has been much advocated. Some of this has been based on medical writings,[9] but most of it on the promotion of medicinal preparations or citrus fruits by advertisers.

In our study, sodium bicarbonate in dosages of 130 grains (8.5 Gm.) a day for the adult of average size was used (table 1). This amount was believed suffi-

7. Stedman, T. L.: Medical Dictionary, New York, William Wood & Co., 1928.
8. Cecil, R. L.: Colds: Cause, Treatment and Prevention, New York, D. Appleton & Co., 1927.
9. Cheney, V. S.: The Common Cold: Etiology, Prevention and Treatment, Am. J. Pub. Health **18**: 15-20 (Jan.) 1928.

cient to produce at least as much "alkalization" as is usually obtained with this treatment. The results, as shown in figure 3, are approximately the same as those reported after acetylsalicylic acid, the acetylsalicylic acid-acetphenetidin-caffeine combination, and lactose. In other words, this study gives no evidence that alkalization is of value in the treatment of the common cold.

TABLE 4.—*Duration of and Time Lost on Account of Acute Colds*

Medication	Number of Cases	Average Time Lost After Treatment, Days: From School or Work	Average Time Lost After Treatment, Days: From School, Work or Other Usual Activities, Total	Percentages Who Lost No Time: From School or Work	Percentages Who Lost No Time: From School, Work or Other Usual Activities	Average Duration of Symptoms, Days: Before Treatment	Average Duration of Symptoms, Days: After Treatment
Codeine-papaverine...	129	0.2	0.5	87.1	78.0	2.8	4.3
Dilaudid-papaverine..	42	0.3	0.5	85.3	80.5	2.6	2.8
Papaverine.....	29	0.3	0.4	79.3	62.1	2.8	6.2
Acetylsalicylic acid...	20	0.3*	0.6*	83.3*	66.7*	2.6*	5.8*
Morphine.....	85	0.3	0.7	86.0	64.2	2.4	4.0
Codeine.....	62	0.4	0.7	72.7	59.3	2.7	5.4
Powder of ipecac and opium.....	42	0.4	0.8	79.5	67.4	2.9	8.4
Morphine-papaverine.	11	0.5*	0.6*	63.7*	63.7*	2.3*	4.3*
Sodium bicarbonate..	27	0.5	0.9	72.0	68.0	2.9	5.3
Opium powder.....	16	0.5*	0.9*	50.0*	33.3*	2.7*	4.1*
Lactose.....	61	0.6	1.2	72.6	62.9	2.6	6.7
Acetylsalicylic acid-acetphenetidin-caffeine.....	36	0.6	1.5	73.0	51.4	2.8	4.6
Dilaudid (dosages 1, 2 and 3).....	42	0.8	1.1	64.3	47.2	2.9	4.4

* Based on less than twenty-five cases; hence, unreliable.

VARIATION IN RESULTS THROUGHOUT THE YEAR

Since no single medication was used continuously, it is impossible to speak with certainty of variation in results throughout the year. However, the results suggest that colds tend to become more severe as the winter progresses. This may be due to an increase in the virulence of the infections or, what is more likely, to a decrease in resistance of the victims.

TABLE 5.—*Results in Subacute and Chronic Colds*

Medication	Total Cases	Percentages Reporting*: Definite Improvement	Questionable Improvement	No Improvement
Codeine-papaverine.....	47	36	21	39
Dilaudid-papaverine.....	13	31	31	48
Morphine-papaverine.....	8	25	13	62
Morphine.....	50	48	24	28
Dilaudid.....	15	47	26	27
Codeine.....	21	43	33	24
Papaverine.....	13	38	31	31
Opium powder.....	10	50	10	40
Powder of ipecac and opium	8	38	12	50
Sodium bicarbonate.....	8	63	12	25
Acetylsalicylic acid-acetphenetidin-caffeine.....	10	30	30	40
Acetylsalicylic acid.....	11	55	27	18
Lactose.....	48	35	31	34

* Most of the percentages in this table are subject to considerable variability because of the small number of cases on which they are based.

A marked decrease in the proportion of reports of "definite improvement" in May with all medications was coincident with, if not actually due to, the prevalence among the student body of a severe infection of the upper respiratory tract characterized primarily by an acute pharyngitis. Many of these patients developed coryza and so were classified in the acute coryza group.

In December there was an epidemic of mild influenza, or grip, among the students. Some of these patients developed coryza and so were given the "cold medications" in use at that time. One of these was the control tablet, and since most of these infections were very mild and of short duration, the proportion of persons reporting definite improvement following the lactose tended to increase during this period.

INFLUENCE OF TREATMENT ON TIME LOST AND ON TOTAL DURATION OF ACUTE COLDS

After this experiment had been in progress about a month, it was decided to check the results by comparing the amount of time lost and the total duration of colds following the various medications. Information relative to this was obtained from a card (fig. 4) which was sent to university students three weeks after treatment.

As may be seen by comparing totals in figure 3 and table 4, these reports of time lost were not received from nearly all the persons treated. For this there are several obvious reasons: viz., the loss of interest on the part of students because of the long interval of time between treatment and the request for this report; the occurrence of vacation periods at the time this report was due; a lack of follow up if the first card was not returned, and the sending of these cards only to certain students in order that all reports would be from individuals under similar regulations in regard to absence from class.

TABLE 6.—*Results in Influenza*

Medication (4)	Total Cases	Percentage Reporting: Definite Improvement	Questionable Improvement	No Improvement
Acetphenetidin.....	33	48	30	22
Morphine-acetphenetidin....	37	42	29	29

The considerable proportion of these reports which are lacking introduces such a large element of possible error that the validity of results indicated by the tabulation is questionable. On the other hand, there is no reason to think that the comparative results with the different medications are not of some significance.

In table 4 are presented the average amounts of time lost from usual activities by patients who received the various medications, the proportion of each group who lost no time, and the average duration of symptoms before and after treatment. From this tabulation it appears that the loss of time by persons who received the medications indicated by figure 3 to be most beneficial and least toxic is significantly less than by those who received the least effective group of drugs.[10] For example, the average amount of time lost from school or work by students who took codeine-papaverine (0.23 day) or dilaudid-papaverine (0.25 day), was approximately half as great as the amount of time lost by those who took sodium bicarbonate, lactose or the acetylsalicylic acid-acetphenetidin-caffeine combination, 0.52, 0.61 and 0.65 day, respectively. The total amount of time after treatment lost from all usual activities is in approximately the same ratio, viz., one-half day after codeine-papaverine or dilaudid-papaverine as compared to from one to one and a half days after sodium bicarbonate, lactose and the acetylsalicylic acid-acetphenetidin-caffeine combination.

10. The only exception to this is acetylsalicylic acid, the loss of time after which is only about half as great as after lactose or the acetylsalicylic acid-acetphenetidin-caffeine combination, which, according to other reports, are of as much value as acetylsalicylic acid. Hence this difference is doubtless without significance and due to the small number of cases.

The figures in regard to the total duration of the colds are of less significance because it is difficult to determine the exact date of termination of a cold. In general, however, these average durations tend to show differences between the medications similar to those suggested by the amounts of time lost.

RESULTS IN SUBACUTE OR CHRONIC COLDS

The group of subacute or chronic colds consists for the most part of individuals with colds of more than four days' duration at the time of treatment, although cases of shorter duration were included if a "thick yellow nasal discharge" was reported. The results of treatment in these subacute or chronic colds (table 5) give no indication that any of the medications used are beneficial. The actual percentages rated "improvement" show considerable variability, but in view of the small numbers of cases on which these are based the differences are without significance.

RESULTS IN INFLUENZA

The effect of morphine in mild influenza without coryza was tested both in ambulatory and in bed patients. The ambulatory patients alternately received acetphenetidin and acetphenetidin plus morphine in the dosages shown in table 1. All the bed patients received the acetylsalicylic acid-acetphenetidin-caffeine combination, but in addition every second patient was also given morphine in the dosage previously indicated.

As to the proportion of influenza patients in whom coryza developed and who consequently were included in our acute coryza group, we have no information, but Doull and Bahlke [11] report that in an influenza epidemic among the resident nurses of Johns Hopkins Hospital, in the winter of 1928-1929, 51 per cent of the patients exhibited coryza as a "first day" symptom. In connection with the study here reported, several members of the health service staff who had influenza with symptoms of coryza and who took morphine reported relief from the symptoms of coryza but no other effect on the course of the infection.

The summary of the reports from the ambulatory patients appears in table 6. Results in the hospitalized patients were estimated by comparing the average number of days that the two groups were confined to bed. These were 2.6 days for twenty-four patients who had received the usual treatment and 2.4 days for sixteen patients who in addition had received the morphine. None of these results suggest any value for morphine in the treatment of influenza without coryza.

RESULTS IN PHARYNGITIS

The cases of pharyngitis are too few to justify conclusions, but the results do not suggest any value for the codeine-papaverine combination in this condition.

COMMENT

It seems quite definite from the results of this study that opium and the major alkaloids derived from it are of distinct value in the treatment of acute coryza. The chief result observed is a marked decrease or complete disappearance of the nasal congestion and discharge. This effect occurs promptly and is usually prolonged or permanent. Rest or sweating is not a factor, although it is reasonable to suppose that secondary infections are less likely to develop if general hygienic measures are followed.

The failure to get good results with any of the medications in cases of influenza and pharyngitis suggests that the variability in results throughout the year may be due, in part at least, to differences in the types of infections causing the coryza. The absence of good results in subacute and chronic colds seems to indicate that beneficial results can be expected only before secondary infections have set in.

SUMMARY OF RESULTS

1. This study shows the relative values of various drugs and drug combinations in the treatment of 1,039 cases of acute coryza, 262 cases of subacute or chronic colds, 114 cases of influenza and 53 cases of acute pharyngitis.

2. Of the drugs studied, only opium and certain alkaloids derived from it seem to be of value in the treatment of acute coryza.

3. Combinations of papaverine with codeine, papaverine with dilaudid, and papaverine with morphine were followed by "definite improvement" in from 74 to 78 per cent of the cases, and in the dosages used these combinations seem to be practically nontoxic.[12]

4. For general use a combination of codeine and papaverine seems most desirable because of the high per centage of good results obtained with it, its low toxicity, and the absence of danger, or at least of "practical danger," of habituation to it.

5. Morphine and dilaudid (dihydromorphinone hydrochloride) alone were followed by "definite improvement" in nearly as large a proportion of cases (73 and 72 per cent, respectively) but each was distinctly more toxic alone than when combined with papaverine.

6. Codeine, papaverine, powdered opium, and powder of ipecac and opium were followed by "definite improvement" in from 56 to 61 per cent of cases. The toxicity of these drugs is in the following order: codeine, powdered opium, powder of ipecac and opium and papaverine, with codeine practically as toxic as morphine.

7. Powder of ipecac and opium, although of value in the treatment of acute colds, is no more beneficial than the same amount of powdered opium without the ipecac.

8. Sodium bicarbonate, acetylsalicylic acid and a combination of acetysalicylic acid-acetphenetidin-caffeine give little if any better results in the treatment of acute coryza than the lactose tablet used as a control, each being followed by "definite improvement" in from 35 to 42 per cent of cases.

9. A computation, based on incomplete reports of time lost from their usual activities by patients who received the various medications suggests that it may be possible with the codeine-papaverine or dilaudid-papaverine combinations to reduce very materially the amount of time lost as a result of acute colds.

10. None of the medications studied seem to be of benefit in subacute or chronic colds.

11. Morphine was tried in influenza but was of no value.

12. The number of cases of pharyngitis treated were too few to justify conclusions, but none of the drugs seemed of value.

Students' Hospital and Dispensary.

11. Doull, J. A., and Bahlke, Anna M.: Epidemic Influenza: A Comparison of Clinical Observation in a Major and Minor Epidemic, Am. J. Hyg. **17**: 562 (May) 1933.

12. Further experience, since the preparation of this paper, with the dilaudid-papaverine combination shows it to be more toxic and of no greater benefit than the codeine papaverine combination.

Clinical Notes, Suggestions and New Instruments

VINCENT'S INFECTION, WITH REPORT OF A CASE

WILLIAM THOMAS WILKINS, JR., M.D., PIQUA, OHIO

For several months before the onset of a severe illness, a white man, aged 36, had recurring single canker sores on the tongue which would last a day or two and disappear without treatment. He was a man of cleanly oral habits, and dentists had repeatedly assured him that there were no pockets or ulcerated areas on his gums. A small canker was present in the mouth when the lower lip became chapped and cracked while the patient was on a fishing excursion. The ulcer of the tongue disappeared but the crack became deeper and quite tender. After a few days this soreness subsided.

About two days later, however, the lip again became sore and the region of the submaxillary glands was tender on chewing and on pressure. For the next five days the lip became increasingly tender, the crack became deeper and the adjacent mucous membrane took on a whitish cast. It felt thick to the tongue. The lips felt dry and parched. The interior of the mouth and the tongue felt hot and there was a suggestion of a metallic taste, but nothing abnormal could be seen in the mouth except that the upper surface of the tongue was possibly slightly more pink than usual. The submaxillary glands on both sides were now easily palpable and quite tender.

Fever in mild degree during the preceding few days was suddenly precipitated by a chill and the patient went to bed. Physical examination at this time revealed nothing more than has been described. The gums seemed entirely normal. The tonsils were out. The pharynx and nares were normal. The temperature was 102 F., pulse 95, respiration 20. The chest, heart, abdomen, skin and extremities were normal. There was no lymphadenopathy beyond that in the neck. The patient was more toxic than his vital signs would indicate.

During the four days that followed the patient's going to bed, the temperature varied between 100 and 102. Several other chills occurred. Toxemia increased. A gnawing, burning sensation in the epigastrium was accompanied by anorexia, and all foods taken into the stomach produced severe cramps. The epigastric region was tender to pressure and distended with gas. On swallowing, a sharp pain occurred deep in the chest in the sternal area. Here also a sensation of soreness and of great distress was constantly present. Two new canker sores appeared on the edge of the tongue. Smears taken from these and the lip and gums showed only an occasional spirillum, as might be expected in a normal mouth. Blood cultures, blood agglutinations for tularemia, undulant fever and typhoid, and urinalyses were negative. The blood count was 7,500 white cells with 65 per cent polymorphonuclears the day the patient went to bed. Two days later it was 8,500, and a week later, 10,200.

For want of better treatment, 0.5 Gm. of neoarsphenamine was administered. Twenty-four hours later, as if by explosion, the gum surface of the entire mouth became swollen, red, boggy and very sore. Bleeding ensued. Smears were filled with Vincent's organisms, both spirilla and fusiform bacilli. The stomach pain, chest soreness and tongue ulcers were suddenly worse. Next day (forty-eight hours after the arsenical medication), all these symptoms were noticeably improved.

During the following two weeks a low grade fever continued. The swelling and ulcerations of the tongue and gums disappeared. Chest pain and gastric distress disappeared in three or four days after the first dose of neoarsphenamine.

The patient received three doses of neoarsphenamine intravenously and four doses of a bismuth compound intramuscularly, equivalent to 0.4 Gm. of neoarsphenamine and 25 mg. of metallic bismuth per dose, during this period of two weeks. Mouth washes of strong sodium perborate solution and diluted hydrogen dioxide were given. The gums were painted two or three times daily with arsphenamine or bismuth solutions. Mouth washes had been carried out for some time before the patient went to bed and continuously afterward, but as far as could be noted from the course of the illness no benefit was derived from them.

Following each intravenous injection of neoarsphenamine the patient became nauseated and dizzy and had various hyperesthesias and visual disturbances. These symptoms seemed to be due to an idiosyncrasy to arsenic, for they appeared and disappeared regularly with the administration of the drug. Exacerbation of the symptoms and signs of the disease itself occurred only after the initial dose.

To summarize the course of the disease after the first injection of neoarsphenamine, the buccal, esophageal and stomach symptoms disappeared in four days; the lip was well in ten days; the glands lost their soreness in six days and were not palpable in ten days; the gums looked normal in two weeks. The patient lost 14 pounds (6.4 Kg.) during his confinement of three weeks. Smears taken from the mouth eight days after the first dose of neoarsphenamine showed only an occasional spirillum and were negative in three weeks.

Orr-Flesh Building.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary.

ANTIPNEUMOCOCCUS SERUM (See New and Nonofficial Remedies, 1933, p. 369 and THE JOURNAL, Dec. 16, 1933, p. 1968).

E. R. Squibb & Sons, New York.

Concentrated Anti-Pneumococcic Serum, Types I and II.— Prepared by immunizing horses with intravenous injections of cultures of type I and type II pneumococci. When test bleedings show the serum to have reached a sufficient degree of potency for types I and II pneumococci, the horses are bled aseptically and the serum is refined and concentrated by the method described by Lloyd D. Felton (*J. Infect. Dis.*, December, 1928, p. 543). The usual sterility and safety tests are made by injection into white mice and guinea-pigs. The potency of the product is expressed in terms of the unit described by Felton (*Boston M. & S. J.*, May 15, 1924, p. 819; *J. Infect. Dis.*, September, 1925, p. 199; October, 1925, p. 309) and used by Park. While the unit originally was intended to be the amount of antibody that will protect against one million fatal doses of culture, it has lately been taken to be 1/200 cc. of the control serum (F 146) distributed by Dr. Felton. Marketed in packages of one syringe containing 10,000 units each of types I and II.

Dosage.—Intravenously, first dose, 10,000 units of each type, followed by a second dose of 20,000 units of each type, in one hour; the second dose may be repeated at intervals of from four to six hours until the temperature falls and beneficial effects are evident.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

PAUL NICHOLAS LEECH, Secretary.

AMPULES SODIUM CACODYLATE 7½ GRAINS (0.5 GM.), 5 CC. (FOR INTRAVENOUS USE) AND AMPULES SODIUM CACODYLATE 15½ GRAINS (1.0 GM.), 10 CC. FOR INTRAVENOUS USE (CHEPLIN BIOLOGICAL LABORATORIES) NOT ACCEPTABLE FOR N. N. R.

The Cheplin Biological Laboratories presented these ampules of sodium cacodylate (among others) for consideration as to inclusion in New and Nonofficial Remedies. In a submitted circular, these particular ampules are stated to be for intravenous use. The Council holds that the desired effects of sodium cacodylate may be achieved by oral administration of the drug or, in exceptional cases, that the intramuscular route may be desirable. The Council recently omitted from New and Nonofficial Remedies ampules of sodium cacodylate labeled "for intravenous administration" even though the manufacturer made no propaganda for such use in the advertising for the product (THE JOURNAL, May 7, 1932, p. 1654). The Council was therefore obliged to hold Ampules Sodium Cacodylate 7½ grains (0.5 Gm.) 5 cc., and Ampules Sodium Cacodylate 15½ grains (1.0 Gm.) 10 cc. (Cheplin Biological Laboratories), both designed for intravenous use, unacceptable for inclusion in New and Nonofficial Remedies.

Committee on Foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

CEMAC

A FOOD FREE FROM CEREAL, EGG AND MILK FOR ALLERGIC CHILDREN

Manufacturer.—Mead Johnson and Company, Evansville, Ind.

Description.—Cooked mixture of cauliflower, tomatoes, beef, carrots, spinach, olive oil, sucrose, "Dextri-Maltose" (essentially a mixture of maltose and dextrins), gelatin, dicalcium acid phosphate, cod liver oil and sodium acid phosphate; prepared by efficient method for retention in high degree of the natural mineral and vitamin values.

Manufacture.—Government inspected beef is ground and mixed with cleaned and chopped cauliflower, tomatoes, carrots and spinach, in a double jacketed, closed type steam kettle; water is added, the kettle is closed, the air is pumped out, and steam is introduced into the outside jacket. The method of cooking minimizes vitamin loss through oxidation. The mixture is strained, admixed with the other ingredients, homogenized, filled into tins, hermetically sealed, and processed under 15 pounds steam pressure for forty-five minutes.

Analysis (submitted by manufacturer).—

	per cent
Moisture	74.8
Ash	1.4
Fat (ether extract)	6.4
Protein (N × 6.25)	6.2
Crude fiber	0.3
Carbohydrates (by difference)	10.9
Calcium (Ca)	0.22
Phosphorus (P)	0.30
Magnesium (Mg)	0.02
Sodium (Na)	0.30
Potassium (K)	0.28
Chlorine (Cl)	0.04
Sulphur (S)	0.06
Iron (Fe)	0.008
Copper (Cu)	0.0015
*p*H	5.0

Calories.—1.3 per gram; 37 per ounce.

Claims of Manufacturer.—A food free from cereal, egg and milk, for children allergic to the proteins of these foods. Designed to supply all the nutritive requirements for normal growth.

FAIRWAY WHITE LABEL BRAND MIXED VEGETABLES

Distributor.—Twin City Wholesale Grocer Company, St. Paul and Minneapolis.

Packer.—The Larsen Company, Green Bay, Wis.

Description.—Mixture of carrots, potatoes, celery, green beans, cabbage, peas, corn, lima beans, onions, sweet peppers, salt and water prepared by efficient methods for retention in high degree of the natural mineral and vitamin values; the same as the accepted "Larsen's Veg-All" (THE JOURNAL, Aug. 12, 1933, p. 525).

PLEE-ZING UNSWEETENED STERILIZED EVAPORATED MILK

Distributor.—Plee-Zing, Inc., Chicago.

Packer.—Page Milk Company, Merrill, Wis.

Description.—Canned, unsweetened evaporated milk, the same as Page Evaporated Milk Sterilized Unsweetened (THE JOURNAL, May 30, 1931, p. 1872).

CASEC (CALCIUM CASEINATE)

Manufacturer.—Mead Johnson and Company, Evansville, Ind.

Description.—Powdered calcium caseinate; readily miscible with water, forming a turbid suspension.

Manufacture.—Skim milk is acidified with acetic acid to precipitate the curd; the whey is removed by decantation. The curd is washed free of whey salts, lactose, lactalbumin and acid, and is heated with a slight excess of precipitated calcium carbonate until the curd dissolves with the formation of calcium caseinate. The excess of calcium carbonate is removed by centrifugation. The calcium caseinate is dried in "vacuum," powdered and packed in hermetically sealed tins in an atmosphere of nitrogen.

Analysis (submitted by manufacturer).—

	per cent
Moisture	5.5
Ash	4.5
Fat (ether extract)	2.0
Protein (N × 6.38)	88.0
Crude fiber	0.0
Carbohydrates (by difference)	0.0
Calcium (Ca)	1.8
Phosphorus (P)	0.6

Calories.—3.7 per gram; 105 per ounce.

Vitamins.—Contains a small amount of vitamin A.

Claims of Manufacturer.—To be used in accordance with the physician's instructions when a food especially rich in protein of high biologic value is desired.

SWEET LIFE BRAND UNSWEETENED EVAPORATED MILK

Distributor.—Grosberg-Cramer Company, Schenectady, N. Y.

Packer.—The Page Milk Company, Merrill, Wis.

Description.—Canned, unsweetened evaporated milk, the same as Page Evaporated Milk (THE JOURNAL, May 30, 1931, p. 1872).

COLLEGE INN PURE TOMATO JUICE

Distributor.—College Inn Food Products Company, Chicago.

Packers.—College Inn Food Products Company, Chicago, and Welch Grape Juice Company, North East, Pa.

Description.—Tomato juice seasoned with salt, retaining in high degree the vitamin content of tomatoes.

Manufacture.—Fresh, vine-ripened tomatoes are washed in a squirrel cage type washer, under high pressure water spray which disintegrates any soft or badly damaged fruit. The sound, whole fruit is trimmed, cored, inspected and passed through a steam box into a chopper, where it is cut into large segments and flowed into an American Utensil screw-type extractor. The head of fruit present at the opening of the juicer prevents the incorporation of air. The juice falls into aluminum kettles containing slow agitators, is heated, deaerated in a vacuum chamber, homogenized, pumped into the bottom of steam jacketed kettles to avoid aeration, seasoned with salt, again heated, and automatically filled into containers (steam replaces the air in the top), which are capped and processed at 90 C. for twenty minutes for bottled juice and at 100 C. for forty-five minutes for the canned. The time elapsing between the receiving of the tomatoes and the sealing of the filled containers is twenty minutes.

Analysis (submitted by manufacturer).—

	per cent
Moisture	92.4
Total solids	7.6
Ash	1.0
Sodium chloride	0.6
Fat (ether extract)	0.0
Protein (N × 6.25)	0.6
Reducing sugars as invert sugar	4.1
Crude fiber	0.2
Carbohydrates other than crude fiber (by difference)	0.4
Titratable acidity as citric acid	0.4

Calories.—0.3 per gram; 8 per ounce.

Vitamins.—The methods of preparation, processing and packing are efficient for protecting the natural vitamin content.

Claims of Manufacturer.—This tomato juice is a good source of vitamins A and B and an excellent source of vitamin C. Especially prepared for table use and as a vitamin C supplementary food for infant feeding.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, DECEMBER 23, 1933

THE PHYSIOLOGY OF WATER

Only in comparatively recent years has the rôle of water in the body begun to receive the serious attention it has long deserved. True, some recognition has been given to the need of a water intake sufficiently large to compensate for the losses in respiration and perspiration as well as the more obvious output through the kidneys. However, the mere statement that water is the most abundant constituent of the tissues and is taken up and released in turn more rapidly than any other substance may suffice to indicate something of its ubiquitous biologic importance. In referring to the surprising fact that the average water content of the entire body is about 70 per cent, a recent textbook [1] explains the purpose of this aqueous component as obviously to provide a medium in which chemical actions can occur and physical chemical phenomena such as osmosis and diffusion can effect the necessary transfers of chemical compounds through tissue membranes. The actual dilution is presumably the optimal dilution for such changes. The author adds that any severe deprivation of water, leading to greater concentration of the chemical compounds present in the tissues, is followed at first by a sensation of thirst and subsequently by a series of pathologic happenings. Of all the varied types of starvation, the complete deprivation of water leads most rapidly to a fatal termination.

Under many circumstances the sensation of thirst is sufficient to help maintain near its optimum the balance between water intake and output that insures the greatest well being. Now and then one hears persons make reference to the "flushing of the kidneys" or some related pseudoscientific term without any real comprehension of what is actually involved or wherein it may have any actual physiologic significance. Few persons realize to what an extent common foods are actual carriers of water into the organism. Some of them are actually made up to an extent of 90 per cent or more of water. Furthermore there are potential sources of water in the metabolism and combustion of the energy-yielding components of the organism. Adolph [2] has remarked that the water contained in a food is present in several forms, ranging from a pure solvent through water of crystallization, of colloidal hydration and of secondary valence to water combined with carbon to form carbohydrate and the like. Until the conditions are known under which each form of water exists, analytic distinctions must remain arbitrary. The main fact, however, as Adolph has pointed out, is that whenever ingestion becomes impossible it is difficult to supply water fast enough. Rectal administration, gastroclysis, parenteral infusion and subcutaneous infusion are all inadequate for any purpose except temporary or experimental use. It is well known that water may be absorbed directly into the outer layers of the mammalian skin, but the passage of significant amounts inward through the skin does not occur.

One way of attaining a more helpful appreciation of the services actually performed by water in the body is to contemplate the actual rate of turnover that this remarkable solvent experiences every day by various organs of adult persons. Some of these organs and fluids, such as the salivary glands, stomach, intestinal walls, pancreas, liver and lymph, return the water that they drain from the blood. The minimum represented in this way is 3,700 cc.; a more liberal estimate is 9,800 cc. In the case of the kidneys, the colon (discharging feces), the skin with its insensible loss, the sweat glands, and in women the mammary glands, the figures for actual total loss of water from the body range from a minimum of 1,050 cc. to the liberal figure 7,800 cc. These calculations, made by Adolph, permit one to estimate the total daily water turnover at something between 4,700 and 17,600 cc., representing an actual possibility of more than 4 gallons. It would be difficult to select a more striking quantitative indication of what the physiologic rôle of water in the organism really means.

In his detailed review of the metabolism and partition of water, Adolph has described the essential relations of the body to water intake. If water is drunk, he states, an equal amount is excreted usually within two or three hours in the urine, in addition to the water excreted at the normal rate. Meanwhile the insensible loss of water increases in rate, so that the body often ends up by having as little water as it would have had if none had been ingested, if not less. The same result is obtained from drinking a solution of almost any salt in a concentration that is isomolar with the blood. But if the salt is sodium chloride or sodium bicarbonate, little or no diuresis results and the excess fluid is eliminated slowly (during twenty-four or forty-eight hours). If protein, carbohydrate or fat is taken with the water, certain amounts of the fluid are retained and stored with the food until the food becomes oxi-

1. Cameron, A. T.: A Textbook of Biochemistry, ed. 4, New York, Macmillan Company, 1933.

2. Adolph, E. F.: The Metabolism and Distribution of Water in Body and Tissues, Physiol. Rev. **13**: 336 (July) 1933.

dized. If the water is taken before food, it will be promptly excreted; if it is taken with or soon after the food or salt, it may be retained. If water alone is taken, particularly after the excessive loss of salts, as by sweating, the dilution of the tissues may be sufficient to bring on intoxication or cramps.

Dehydration has come to be regarded as a serious medical problem under certain circumstances. Its occurrence is being more generally recognized, particularly in infancy. Adolph has pointed out that dehydration resulting from low water intake or other processes produces many effects that are quite obvious. The sense of thirst normally detects dehydration first but is readily interfered with by experimental or pathologic conditions. The superficial signs of lack of water are dryness of the skin, shrinkage of subcutaneous tissues, decreased deformability of skin, and decreased rate of urinary excretion. Diminution of blood volume and shrinkage of other tissues follow. What is an adequate water supply? The most obvious test, Adolph insists, is to give a large quantity of water by mouth and to see whether any of it is retained, or at least whether the urine becomes diluted. In most cases this indicates whether or not the body is "saturated." Changes in body weight may be used to detect the retention of water. Most physiologists will agree with Adolph, however, that all measurements of the state of the body with respect to water must be relatively empirical until the mechanisms of regulation are better understood.

HOSPITALS AND THE DEPRESSION

The depression has placed a serious additional burden on hospitals and clinics that minister to the poor. The poor have increased in number; funds to meet the costs of their care have decreased. What were the hospitals to do? There were two alternatives. They must either increase their revenues or cut their costs. The former has been in most instances impossible. To reduce costs without thereby curtailing the quantity of service afforded or endangering its quality has been extremely difficult. Though many unbalanced hospital budgets and depleted unrestricted endowment funds mark the efforts of hospitals to meet the situation, various other means have also been tried. Most hospitals have lowered salaries and wages, not once but two or three times. They have done this not because hospital trustees have felt that their employees were overpaid but because this was an immediately effective way of reducing costs. Thus, hospital employees have had to bear more than their fair share of the costs of the increased load placed by the depression on the shoulders of the institutions in which they work. In addition to wage reductions, many hospitals have culled from their payrolls personnel who could perhaps be spared without impairing essential service to patients. Some have depleted their social service departments and have given up well baby clinics, routine health examinations, examinations for child placement, and other preventive and educational activities. Some private hospitals have restricted their outpatient service to those patients who could pay their nominal charges, referring those who could not to municipal hospitals and clinics. Some have reduced the period of hospitalization of obstetric patients to seven, five, or even three days following delivery, arranging with nursing organizations to give further after-care in the patients' homes. Others have more rigidly restricted their admissions to those who are acutely ill.

The necessity of practicing rigid economy has not been without a modicum of value to hospitals. No doubt it has led many hospital administrators to give greater attention to the business aspects of their job. Lavish expenditures for nonessentials are being curbed. The building of hospitals that are not needed and the inordinate decoration and furnishing of those that are to be built have at least temporarily ceased.

Efforts were made by various organizations to secure portions of state and federal appropriations for the unemployed and their dependents for the hospitals. Most of these efforts have been futile. Though there has been some assistance to hospitals from public relief funds in a few states, the Federal Relief Administration made it clear from the start that it would not permit the allocation to hospitals of any of the money at its disposal. This position was taken, no doubt, because of the inadequacy of the appropriation in relation to the immensity of the task. If the way out of the present economic situation is to be marked by a rise in commodity prices, the plight of the hospitals will be still sorrier for a period. Though more patients will eventually be able to pay their bills, increased costs of the goods they consume will be experienced by hospitals long before there will be an appreciable increase in their revenue from patients. Most hospitals have in one way or another weathered the storm thus far. The communities they serve must see to it, however, that they are neither wrecked nor disabled if the gales continue to blow.

THE RESPIRATOR IN EPIDEMIC POLIOMYELITIS

The management of acute epidemic poliomyelitis presents many serious difficulties calling for a variety of clinical experience and technical skill in their successful solution. After the epidemic character of the disease became clearly recognized in this country, the pressing problem seemed to be the treatment of the resulting paralysis. This is probably what might be expected because of the conspicuous nature of this symptom and its distressing effects on the patient. It was presently learned that damage may sometimes be done to the paralyzed patients by the institution of measures that are too energetic. Draper [1] has said that it is far better

1. Draper, George: Meningomyelo-Encephalitis, in Cecil's Textbook of Medicine, ed. 2, Philadelphia, W. B. Saunders Company, 1930.

to err on the side of inaction than to begin massage and passive motion too soon. Fortunately, great progress has been made in the treatment of the paralyzed parts.

Of late the threatening symptoms of the respiratory embarrassment due to poliomyelitis have come into prominence. The introduction of apparatus to promote intrapulmonary exchange of air sufficient to maintain life has become widespread, especially since the development of the Drinker respirator,[2] now most frequently used for respiratory failure. After reporting the results of the employment of this apparatus in a considerable number of cases at the Willard Parker Hospital, New York, Brahdy and Lenarsky [3] conclude that the Drinker respirator represents a decided advance in the treatment of respiratory failure in poliomyelitis. With improvement in the apparatus and in the technic of treatment, the mortality among patients who would die of respiratory failure should be greatly decreased. The time has arrived to ascertain the shortcomings as well as the merits of such promising therapeutic methods. The New York investigators observe that the medical and nursing care of the patient, aside from the artificial respiration, must be kept in mind. The timely administration of sedatives and parenteral injections of fluid, laxatives or other medication will avoid interference with the artificial respiration. As it is not possible to tell whether a patient will need treatment in the respirator for a few days or for several weeks, the paralyzed skeletal muscles require attention. Until the apparatus and technic are improved, Brahdy and Lenarsky do not advise the treatment of patients with slight or moderate respiratory distress in the respirator. Repeated small doses of sedatives and continued reassurances, they state, will make such patients comfortable and enable them to rest; but a patient with involvement of the respiratory muscles should be in a hospital near a respirator, because there is no way of telling whether or not the condition will become worse.

The spinal lesions characteristic of poliomyelitis by no means present a highly unfavorable prognosis; [4] but when there are bulbar lesions associated with the more vital centers the outlook is not encouraging. Today the problem of when to initiate the use of the respirator perhaps occasions the most serious debate, for respirators are so expensive that the number available at any one institution is limited, and during an epidemic only the patients with the most urgent cases can be treated. For the same reason it would be impossible to give more than a few patients prolonged treatment in the respirator after they had regained the use of their respiratory muscles. Of course, respiratory failure is not the only cause of death in poliomyelitis.

2. Drinker, Philip, and Shaw, L. A.: An Apparatus for Prolonged Administration of Artificial Respiration, J. Clin. Investigation **7**: 229 (June 20) 1929.

3. Brahdy, M. B., and Lenarsky, Maurice: Treatment of Respiratory Failure in Acute Epidemic Poliomyelitis, Am. J. Dis. Child. **46**: 705 (Oct.) 1933.

4. Wilson, J. L.: Acute Anterior Poliomyelitis, New England J. Med. **206**: 887 (April 28) 1932.

Current Comment

TRANSMISSION OF COMMON COLDS BY FOOD

The possibility that common colds may be spread by fomites has been suggested by epidemiologists, but convincing experimental proof has not been available. The recent demonstration by Bliss and Long [1] of Johns Hopkins University that contaminated food may transmit this disease to chimpanzees, therefore, is significant. Fifteen apes were kept for three months under scrupulous quarantine conditions. All attendants were examined daily for infections of the upper respiratory tract and remained healthy throughout the experiments. The attendants wore masks and gowns and took full aseptic precautions in preparing food and taking care of the animals. During this preliminary period the fifteen apes remained free from infections of the upper respiratory tract. At the end of the period a person suffering from a common cold was allowed to prepare food for the animals. After the food was placed in aseptic containers by this person, he left the kitchen. The attendant then entered, carried the containers to the quarantine rooms, and placed them in the individual chimpanzee cages. Within forty-eight hours after the first meal, five of the apes developed typical symptoms of infection, such as nasal discharge, nasal obstruction, mouth breathing, slight fever, and leukocytosis. Two developed a moderately severe cough.

FEDERAL MEDICAL RELIEF AND EMPLOYEES' COMPENSATION

Four million persons have been placed within the last few weeks under the coverage of the Federal Employees' Compensation Act. The mechanism of this new phase of governmental activity is described under Government Services in this issue of THE JOURNAL. For every injury and occupational disease sustained in the performance of duty, all the four million are entitled to medical and hospital service at government expense. For disability or death resulting from such injuries and diseases, they or their surviving dependents are entitled to compensation. This army of employees has been hired and put to work, many of them in strange fields, without medical examination or approval. The possibilities of the situation, present and future, require the serious consideration of the medical profession. Under the cover of emergency activities the government is enabled to undertake actions that would not be assumed in less feverish times without extended hearings by all the elements of the population concerned. Physicians view with alarm this gradual transmutation of medical practice into a function of government bureaucracy. History indicates that measures introduced in an emergency tend to be perpetuated by the bureaucrats developed to make them effective during the emergency. The medical profession requires some assurance that these new invasions of medical practice by the government are to be truly emergency measures in the strictest sense of that term.

1. Bliss, E. A., and Long, P. H.: Proc. Soc. Exper. Biol. & Med. **31**: 31 (Oct.) 1933.

Association News

MEDICAL BROADCAST FOR THE WEEK

Talks over Network of the National Broadcasting Company

The American Medical Association broadcasts each Monday afternoon from 4:45 to 5 o'clock, Eastern standard time (3:45 central standard time). There will be no talk on Monday, December 25, or on January 1. The next talk over the National Broadcasting Company network will be on January 8.

Radio Talks from Station WBBM

The American Medical Association broadcasts on Tuesday and Thursday mornings from 8:55 to 9 o'clock, central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

December 26. Children's Parties.
December 28. Who Knows More Than the Doctor?

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

December 30. Plastic Surgery.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Personal.—J. Harold Williams, Ph.D., professor of education, University of California at Los Angeles, was elected president of the Southern California Society for Mental Hygiene recently.—Dr. Howard Morrow, San Francisco, has been appointed president of the California State Board of Health, succeeding Dr. John H. Graves, San Francisco, resigned.

Heart Committee.—Dr. Gordon E. Hein was named chairman of the San Francisco Heart Committee during its annual meeting, November 23; Dr. John J. Sampson, vice chairman, and Dr. Jay Marion Read, reelected secretary. Fifty-five cities of California were represented at the annual heart symposium, November 22-23, and the total attendance was 655.

Committees on Cancer Education.—A program of cancer education for the lay public will soon be inaugurated by the Cancer Commission of the California Medical Association, according to a recent announcement. Committees will be appointed representing each county society and these with the state commission will furnish speakers for meetings. Local publicity will be handled by the county committees.

Dr. Evans to Give Herzstein Lectures.—The fourth course of the Morris Herzstein lectures will be delivered at the San Francisco County Medical Society by Dr. Herbert M. Evans, Morris Herzstein professor of biology, University of California Medical School, January 29 and 31 and February 2. Dr. Evans will speak on "Internal Secretions of the Anterior Lobe of the Pituitary Body." The lectures are given under the auspices of the medical schools of the University of California and Stanford University.

COLORADO

Hospital Meeting.—Dr. John Andrew, Longmont, was chosen president-elect of the Colorado Hospital Association at its annual meeting in Denver, November 15-16. Mr. Guy M. Hanner is president. Dr. George Walter Holden, a former president, and Mr. George A. Collins, Denver, for many years a member of the association, were made life members at this meeting.

Society News.—At a meeting of the El Paso County Medical Society, November 8, Drs. George H. Stine, Colorado Springs, spoke on "Treatment of Strabismus" and William C. Black, Denver, "Agranulocytosis."—The Mesa County Medical Society was addressed in Grand Junction recently by Dr. Edward H. Peterson on "Cirrhosis of the Liver" and Mr. Robert Whipple, "Aschheim-Zondek Test for Pregnancy."—Dr. Cecil H. Darrow, Denver, spoke before the Pueblo County Medical Society in Pueblo, November 7, on "Increasing Use of the Bronchoscope," and Dr. Herbert A. Black, November 21, "Treatment of Inoperable Carcinoma of the Uterus."

CONNECTICUT

History of County Society.—Interesting features in the history of the New Haven County Medical Association are now brought out in prospect of the celebration of the one hundred and fiftieth anniversary of its founding, January 15. The association was the ninth county medical society formed in this country and is the second oldest of those which have been continuously in existence, it is believed. Dr. Leverett Hubbard, first president of the association, was also first president of the Connecticut State Medical Society, and Dr. Jonathan Knight, a member of the county organization, became president of the American Medical Association in 1853. The first medical transactions to be published in this country were issued by the New Haven County Medical Association. The records of the association from its first meeting in 1784 to the present time are in a perfect state of preservation and constitute a collection of exceptional interest in the history of medicine, the report says.

ILLINOIS

Personal.—Dr. Otto H. Crist, Danville, was elected president of the Wabash Valley Aesculapian Society recently. The semiannual meeting will be held in Danville in May.—Dr. William E. Kendall has been appointed chief medical officer of the Edward Hines, Jr., Hospital, Hines, succeeding Dr. William G. Cassels, who has gone to Washington, D. C., to serve as a member of the board of appeals in the Veterans' Administration.—Dr. Harriett Daniel, Murphysboro, has been appointed pediatrician to the state health department, it is reported.—Dr. David L. Bley, Staunton, announced his retirement from practice at a dinner, November 14, in honor of his eightieth birthday, newspapers reported. He has practiced medicine in Staunton for fifty-eight years.

Chicago

Personal.—Dr. Harold Hoover has been appointed assistant in medicine in the department of internal medicine, University of Illinois College of Medicine.—The University Palms, Grade Officer d'Académie, has recently been conferred on Dr. Disraeli W. Kobak by the French government, in recognition of his work in physical therapy.

Professor Elschnig to Lecture on Cataract Extraction.—Dr. Anton Elschnig, professor and head of the department, German University Eye Clinic, Prague, Czechoslovakia, will conduct a course on intracapsular extraction of cataract, February 27, under the auspices of the Chicago Ophthalmological Society. An illustrated lecture early in the afternoon will be followed by operations on patients before groups of not more than ten registrants. The registration fee is $10. Professor Elschnig will address the society, February 26, on "Extraction of the Lens in Myopia." Further information may be had from Dr. Theodore M. Shapira, 58 East Washington Street.

LOUISIANA

Dr. Matas Honored.—At a ceremony in New Orleans, December 4, Dr. Rudolph Matas, since 1928 emeritus professor of surgery, Tulane University of Louisiana School of Medicine, New Orleans, was presented with the medal of the Order of Isabella the Catholic, the only Spanish decoration retained by the republic from the late monarchy; the presentation was made by the consul of Spain. The honorary degree of doctor of medicine and surgery was also conferred on Dr. Matas on this occasion, the consul-general of Guatemala making the presentation on behalf of the University of Guatemala. The mayor of New Orleans presided at the ceremony and Dr. Edward L. King, president, Orleans Parish Medical Society, was among the speakers. Dr. Matas was professor of surgery at Tulane from 1895 to 1927.

Society News.—Dr. Edgar G. Ballenger, Atlanta, Ga., delivered the eighth Stanford E. Chaille Memorial Oration of the Orleans Parish Medical Society, December 4, on "Affections and Lesions of the Prostatic Urethra, with Special Reference to Transurethral Resection." Speakers before the society, November 13, were Drs. David L. Watson on "Use of Emetine Hydrochloride in the Treatment of Infectious Diseases";

Ansel M. Caine, "Oxygen Therapy," and Sydney Jacobs, "Hyperinsulinism." A symposium on dysentery constituted the program of the society, November 27, with the following speakers: Drs. Charles W. Duval, Daniel N. Silverman and Charles F. Craig and Ernest Carroll Faust, Ph.D.——The Fourth District Medical Society was addressed in Shreveport, November 7, by Drs. Carl A. Weiss, Baton Rouge, and J. Garnett Yearwood, Shreveport, on medical economics. Dr. Yearwood was elected president.

MICHIGAN

Personal.—Dr. Bernard W. Carey, Detroit, medical director of the Children's Fund of Michigan, was elected president of the Michigan Public Health Association at its annual meeting in Lansing, November 9, succeeding Dr. William J. V. Deacon of the state department of health.

Illegal Practitioner Fined.—Frank J. Brimmer, "Indian herb medicine man," pleaded guilty to a charge of practicing medicine without a license, November 2, in Grand Rapids and paid a $50 fine and costs to avoid serving a sixty day jail sentence, newspapers reported. Brimmer admitted prescribing for a woman who, according to a previous diagnosis by a physician, was ill with diabetes. The woman's husband stated that Brimmer attempted to make him believe that he also required treatment, it was said.

Course in Psychiatry and Neurology.—A five day course in psychiatry and neurology for the general practitioner will begin, January 22, under the auspices of the department of graduate medicine, University of Michigan Medical School, Ann Arbor. Emphasis will be placed on the diagnosis and management of the minor psychoses. Participating in the course as instructors will be Drs. Albert M. Barrett, director of the state psychopathic hospital and professor of psychiatry; Carl D. Camp, professor of neurology; Max M. Peet, professor of neurologic surgery, and Udo J. Wile, professor of dermatology, and others.

Society News.—Dr. Henry Field, Jr., Ann Arbor, addressed the Oakland County Medical Society in Pontiac, November 15, on "Treatment of Arthritis."——Drs. William V. Mullin and Albert D. Ruedemann, Cleveland, discussed allergy, focal infections, multiple sclerosis and retrobulbar neuritis before the Detroit Oto-Laryngological Society, November 15.——Clarence C. Little, Sc.D., Bar Harbor, Maine, addressed the Wayne County Medical Society, December 4, on "A Survey on Cancer."——Drs. David J. Levy and Wyman C. C. Cole conducted a round table before the Detroit Pediatric Society, November 8, on feeding of the new-born infant.——The Kalamazoo Academy of Medicine was addressed, November 21, by Drs. John L. Lavan, health officer of Kalamazoo, on "Present-Day Status of Immunologic Sera and Vaccines," and George L. Waldbott, Detroit, "Management of the Allergic Patient."——Dr. Neil I. Bentley, Detroit, addressed the Monroe County Medical Society, November 16, on "Ear Conditions Following Acute Respiratory Infection."

MINNESOTA

Personal.—Dr. Vernon L. Hart, formerly of Dayton, Ohio, now of Minneapolis, has been appointed instructor in the department of orthopedic surgery, University of Minnesota Medical School, Minneapolis, effective, October 1. Dr. Hart is continuing the practice of the late Dr. Emil S. Geist.——Dr. Albert E. Olson, Duluth, was recently appointed a regent of the University of Minnesota.

Radiologic Meeting.—The Minnesota Radiological Society held its fall meeting in St. Paul, November 11. The following program was presented:

Dr. Willard L. Burnap, Fergus Falls, Osteochondritis Juvenilis Deformans.
Dr. Maurice A. Shillington, St. Paul, Observations from a Clinical Tour.
Dr. Kano Ikeda, St. Paul, Pneumonia in Young Infants Associated with the Aspiration of Various Oils.
Dr. Walter H. Ude, Minneapolis, The Roentgen Diagnosis of Placenta Praevia.
R. B. Wilsey, M.A., Rochester, N. Y., The Improvement of Chest Radiography.
Dr. George M. Landau, Chicago, The American Registry of Radiological Technicians.

In addition, Dr. Alfred W. Adson, Rochester, spoke on "The Value of Ventriculography and Encephalography to the Brain Surgeons," and L. A. Carlson, St. Paul, showed a motion picture demonstrating the manufacture of x-ray film.

MISSISSIPPI

State Board Lends X-Ray Machine.—A philanthropic agency recently presented a portable x-ray machine to the Mississippi State Board of Health, to be sent out from time to time to counties in which there are no x-ray machines. Only those who are sent to the chest clinics by physicians or accompanied by physicians will be examined.

Resolution on Mosquito Eradication.—The Issaquena-Sharkey-Warren Counties Medical Society recently adopted a resolution urging the appointment of a committee to study malaria control and the eradication of mosquitoes. Declaring the incidence of malaria in and about Vicksburg to be the highest for many years, the society recommended that a committee representing the Warren County Health Department, the Vicksburg Chamber of Commerce, the mayor and aldermen of Vicksburg, the supervisors of Warren County, and the Mississippi River Commission and district engineers work with the malaria committee of the society to achieve the eradication of mosquitoes.

MISSOURI

Dr. Cannon Gives Hodgen Lecture.—Dr. Walter B. Cannon, George Higginson professor of physiology, Harvard Medical School, Boston, will deliver the annual Hodgen lecture of the St. Louis Medical Society, January 9. His subject will be "The Significance of the Emotional Level."

Advisory Committee.—An advisory committee of members of the Missouri State Medical Association has been appointed to cooperate with the state board of health. Members of the committee, appointed by Dr. Warren L. Allee, Eldon, president of the association, are Dr. Williams McKim Marriott, St. Louis, dean, Washington University School of Medicine; Father Alphonse M. Schwitalla, St. Louis, dean, St. Louis University School of Medicine; Dr. Dudley S. Conley, Columbia, dean, University of Missouri School of Medicine; Dr. Arthur R. McComas, Sturgeon, chairman; Dr. William H. Breuer, St. James; Dr. Jabez N. Jackson, Kansas City, and Dr. Edward J. Goodwin, St. Louis, ex officio. The appointment of the committee was in response to a request of the state health department.

Society News.—A symposium on inflammation of the female pelvis was presented before the Cole County Medical Society in Jefferson City, recently, by Drs. Richard P. Dorris, Thomas J. Kelly, Edward E. Mansur and William A. Clark.——Dr. William M. Kinney, Carthage, gave a paper on "Interpretation of the Normal Chest Roentgenogram" before the Jasper County Medical Society, November 14.——At a meeting of the Nodaway County Medical Society in Maryville, November 17, Drs. John L. Myers and George H. Thiele, Jr., Kansas City, were the guest speakers on "Practical Suggestions for the General Practitioner on Ear, Nose and Throat Work" and "Diagnosis and Treatment of Anorectal Disease," respectively.——November 28 was designated as "past presidents' night" for the St. Louis Medical Society. Dr. Morris Fishbein, Chicago, editor of THE JOURNAL, spoke on "Present Trends in Medical Practice."

NEBRASKA

Personal.—Dr. James T. Googe, Meridian, Miss., has been appointed health officer of Lincoln. He assumed the office, December 1.——Dr. Archibald R. McIntyre, associate professor of physiology and pharmacology at the University of Nebraska School of Medicine, Omaha, has been promoted to a professorship.

NEW JERSEY

Tribute to Hospital Head.—Dr. James F. Ackerman, president of the board of governors of the Fitkin Hospital, Asbury Park, was guest of honor at a testimonial dinner sponsored by the Monmouth County Medical Society, September 14. Tributes were paid to Dr. Ackerman by Gov. Harry Moore; Mayor Clarence E. F. Hetrick of Asbury; Dr. Claude A. Burrett, dean, New York Homeopathic Medical College, New York; Dr. Samuel A. Brown, dean, New York University and Bellevue Hospital Medical College; Dr. Frederic J. Quigley, Union City, president, Medical Society of New Jersey, and Dr. Robert E. Watkins, Belmar, president, Monmouth County Medical Society. Dr. William G. Herrman, Asbury Park, was toastmaster. About 300 persons attended the dinner.

Society News.—Dr. Roger H. Dennett, New York, addressed the Bergen County Medical Society, Hackensack, November 14, on "Everyday Problems of the Pediatrician and

the General Practitioner." The society's program of graduate courses began with a series for November on gynecology given by Dr. David Corn at the Hackensack Hospital.——Drs. Joseph T. Beardwood, Jr., and Frederick A. Bothe, Philadelphia, discussed medical and surgical management, respectively, of hypothyroidism and hyperthyroidism at a meeting of the Atlantic County Medical Society, Atlantic City, November 10.——Dr. George Griffith, Philadelphia, addressed the Camden County Medical Society, Camden, November 7, on cardiac arrhythmias.——Drs. Harrison S. Martland, Newark, and Charles Norris, New York, and Mr. Louis Costuma of the New York City police department addressed the Associated Physicians of Montclair and Vicinity in Bellevue, October 27, on medical methods of dealing with crime.

NEW YORK

University News.—The University of Buffalo announces competition for its annual award of a gold medal to the author of a paper on an ophthalmologic or allied subject. Details may be obtained by writing to the dean of the medical department or to Dr. Harold W. Cowper, 543 Franklin Street, Buffalo, chairman of the committee on award.

Health at Utica.—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended December 9, indicate that the highest mortality (20.2) appeared for Utica and that the rate for the group of cities as a whole was 12. The mortality rate for Utica for the corresponding week of 1932 was 11.7 and the rate for the group of cities, 12.3. The annual rate for the eighty-five cities was 10.9 for the forty-nine weeks of 1933, as against a rate of 11.1 for the corresponding period of last year.

Society News.—Speakers at the annual meeting of the Medical Society of the County of Franklin, Malone, October 30, were Drs. William V. Cone and David W. MacKenzie, Montreal, Que., on "Abscess of Brain—Diagnosis, Pathology and Treatment" and "The Prostate—Its Pathological Aspects and Newer Forms of Treatment," respectively, and Harold H. Berman, Ogdensburg, on "Psychoneurosis."——Dr. Louis C. Kress, Buffalo, gave a paper on "Five Year Cancer Cures" at a meeting of the Dutchess-Putnam Medical Society, November 8, in Poughkeepsie.——A symposium on neurology was presented by three Syracuse physicians before the Medical Society of Jefferson County, Watertown, November 9; Dr. Eugene N. Boudreau discussed pathology, Dr. Wardner D. Ayer, pathology, and Dr. Albert B. Siewers, clinical manifestations.

New York City

New Clinic for Occupational Disease.—New York University and Bellevue Hospital Medical College has opened a special clinic for occupational diseases, with a laboratory equipped for the work. Cases of lead poisoning, silicosis, occupational dermatoses and benzene poisoning have already been handled in the clinic, which meets Wednesday afternoons. Physicians and industrial health workers have been invited to refer cases.

Dr. Wynne to Retire as Health Commissioner.—Dr. Shirley W. Wynne, health commissioner of New York, has filed application for retirement to take effect December 31. Dr. Wynne entered the department in October, 1907, as a medical inspector and served as assistant registrar and chief of the division of statistical research up until 1920, when he was named assistant to the commissioner. In 1924 he was made director of hospitals. In 1926 Dr. Wynne was appointed deputy commissioner and on the resignation of Dr. Louis I. Harris in 1928 he became commissioner.

Gifts to Columbia.—Recent gifts to Columbia University for medical purposes include the following:

Rockefeller Foundation, $29,374 for various purposes; $6,000 for aid of studies of the common cold.

General Education Board, $4,583.33 toward maintenance of the department of the practice of medicine; $8,000 toward support of the subdepartments of tropical medicine.

Edward S. Harkness, $9,967 toward support of the department of diseases of children.

Josiah Macy, Jr., Foundation, $8,462.50 for the work of various departments.

Eli Lilly and Company, $2,400 for research in the department of pathology.

Commonwealth Fund, $18,000 for research into causes of dental decay.

W. K. Kellogg Foundation, $10,000 for study of rheumatic fever under the direction of Dr. Walter W. Palmer.

National Research Council, $5,000 for special research in the department of anatomy.

OHIO

Professor of Anatomy Appointed.—Rollo C. Baker, Ph.D., for many years a member of the department of anatomy at Ohio State University College of Medicine, has been appointed chairman of the department to succeed the late Francis L. Landacre, Ph.D.

Personal.—Dr. and Mrs. Harry W. Powers, Amherst, celebrated their fiftieth wedding anniversary, November 29.——Dr. Floyd R. Stamp, Alliance, has been elected health commissioner of Stark County.——Dr. Seward Harris, Lisbon, has been appointed health commissioner of Columbia County to succeed the late Dr. Thomas T. Church, Salem.

Cincinnati Physicians Install Business Bureau.—The Physicians' Business Bureau has recently been organized in Cincinnati, with the approval of the Cincinnati Academy of Medicine, for credit rating of patients and collection of troublesome accounts. Dr. Louis Howard Schriver, a past president of the academy of medicine, is president of the bureau. The academy has recently installed a telephone service to locate physicians and to give information to the public on questions of public health. Questions concerning hospitals and other institutions will also be answered.

Tuberculosis Week in Columbus.—To further education of the public and stimulate activity of the medical profession concerning tuberculosis, the Columbus Academy of Medicine carried out a program, November 13-17. Clinics were held each day at various hospitals for physicians and the public was invited to inspect hospitals and clinics treating the tuberculous, November 16. Dr. Jay Arthur Myers, Minneapolis, addressed a meeting of the academy, November 13, on "Modern Aspects of the Diagnosis and Treatment of Tuberculosis" and Dr. Edward J. O'Brien, Detroit, addressed a dinner meeting, November 17, on "Collapse Therapy in the Treatment of Pulmonary Tuberculosis." Both guests also gave radio talks; Dr. Myers addressed the physicians at Columbus Preventorium on childhood tuberculosis and Dr. O'Brien spoke at a special meeting of the Ohio Sanatorium Association at the Franklin County Sanatorium, on thoracoplasty. The Columbus Tuberculosis Society also participated in the activities with demonstrations of dispensary cases.

PENNSYLVANIA

Dinner to Dr. Falkowsky.—The Lackawanna County Medical Society recently gave a dinner in honor of Dr. Charles Falkowsky, Jr., Scranton, president of the Medical Society of the State of Pennsylvania during the past year. Dr. Donald Guthrie, Sayre, president of the state society, and Dr. Edward A. Schumann, Philadelphia, delivered addresses and Dr. Leonard G. Redding, Scranton, presented an engraved medal to Dr. Falkowsky on behalf of the society. Dr. Ernest L. Kiesel, Scranton, was toastmaster.

Secretary for Thirty-Eight Years.—The Bucks County Medical Society gave a dinner at Doylestown, November 14, in honor of Dr. Anthony F. Myers, Blooming Glen, who has been secretary of the society since 1895. Dr. Myers has been a member of the society since 1888 and has missed only four meetings since that time, it was said. In 1893 he served as president. Speakers of the evening were Drs. Moses Behrend, Philadelphia, president-elect of the Medical Society of the State of Pennsylvania, and Wilmer E. Krusen, Philadelphia. Dr. John B. Carrell, Hatboro, was toastmaster. The meeting also marked the eighty-fifth anniversary of the founding of the society.

Philadelphia

Navy Hospital Cornerstone Laid.—The laying of the cornerstone of the new Navy Hospital was a feature of the annual celebration of Navy Day, October 27. Rear Admiral Charles E. Riggs, former surgeon general of the navy, officiated and Rear Admiral Perceval S. Rossiter, present surgeon general, summarized the history of the hospital. The Bureau of Medicine and Surgery, Washington, D. C., has the clinical records of the hospital, in which the first entry is dated May 3, 1822. The new building will have 650 beds and the total cost is estimated at $3,200,000.

Personal.—Dr. William E. Parke was elected president of the Association of Ex-Residents and Resident Physicians of the Philadelphia General Hospital at the annual dinner, December 5. Dr. George Wilson was reelected secretary.——Dr. Emily L. Van Loon was recently elected president of the graduate council and alumnae association of the Woman's Medical College of Pennsylvania.——Dr. Earl D. Bond, medical director of the Institute of the Pennsylvania Hospital, has established a fund for mental patients with the $10,000 accom-

panying the Philadelphia Award for distinctive community service, which he received last February (THE JOURNAL, March 4, page 671).——The West Philadelphia Medical Association gave a dinner, November 28, in honor of Dr. Moses Behrend, president-elect of the Medical Society of the State of Pennsylvania.

Society News.—Dr. Alwin M. Pappenheimer, professor of pathology, Columbia University College of Physicians and Surgeons, New York, gave the annual Gross Lecture of the Pathological Society of Philadelphia, December 14, on "Certain Nutritional Disorders of Laboratory Animals."——Drs. Helena E. Riggs and Paul Sloane addressed the Philadelphia Neurological Society, December 15, on "Significance of Colloidal Gold Curve in Nonluetic Infections" and "Newer Concepts in the Treatment of Chorea," respectively.——Dr. George S. Crampton, professor of ophthalmology, University of Pennsylvania Graduate School of Medicine, gave an illustrated lecture on the manufacture of ophthalmic lenses, with special reference to bifocals, at the new Franklin Institute, December 20.——The Philadelphia Health Council and Tuberculosis Committee announced that the number of cases of tuberculosis diagnosed in its clinics from January through October showed a 17 per cent increase over the same period of 1932.

TEXAS

Society News.—Dr. Elbert Dunlap, Dallas, was elected president of the Texas Association of Obstetricians and Gynecologists at the recent annual meeting in San Antonio, September 30.——The El Paso County Medical Society cooperated with the city-county health department in a campaign of immunization against diphtheria for the month of November. The department was to furnish toxoid to physicians and urged parents to send children to the family physician. Indigents were to be given free immunization on proof that they were unable to pay a physician.——Dr. Platt L. Allen presented a paper on epidemic pleurodynia at the meeting of the Parker County Medical Society, October 3, in Weatherford.——Speakers at the meeting of the Harris County Medical Society, Houston, October 11, were Drs. Lloyd U. Lumpkin, on "Nerve Block Anesthesia," and Herman W. Johnson, Robert A. Johnston and Henry O. Nicholas, Ph.D., on "Eclamptic Toxemia: A Consideration of the Poisonous Amines as a Possible Cause."

WEST VIRGINIA

Heart Association Meeting.—The medical department of the University of West Virginia and Monongalia County Medical Society were joint sponsors of a meeting of the West Virginia Heart Association at the university in Morgantown, November 28-29. Dr. Arthur M. Shipley, Baltimore, was the guest speaker at a dinner, Tuesday evening, November 28, on "Surgery of the Heart and Pericardium." Among other speakers at the sessions were the following members of the university faculty: Drs. Samuel J. Morris, on anatomy of the cardiovascular system; Dr. Edward J. Van Liere, physiology; Clement C. Fenton, bacteriology and pathology of cardiovascular disease, and Norman A. David, pharmacology and drug therapy of heart disease. Dr. Oscar B. Biern, Huntington, is president of the association, Dr. Raphael J. Condry, secretary.

WISCONSIN

Society News.—Dr. M. Reese Guttman, Chicago, addressed the Fond du Lac County Medical Society, November 8, on mastoiditis and its complications.——At a meeting of the Tri-County Medical Society (Juneau-Vernon-Monroe) at Tomah, October 12, speakers were Drs. Joseph Dean, Madison, on arteriovenous aneurysms; Fred W. Gaarde, Rochester, Minn., allergy, and Paul A. O'Leary, Rochester, dermatology.—— Dr. Avery D. Prangen, Rochester, Minn., addressed the Rock River Eye, Ear, Nose and Throat Society, October 17, in Beloit, on new methods in surgery of the eye.

District Meetings.—The Seventh Councilor District Medical Society held its annual meeting at La Crosse, November 8. Medical and surgical clinics were held at La Crosse hospitals in the forenoon and a program of addresses in the afternoon. Speakers were Drs. Ralph M. Waters and John W. Harris, Madison, on anesthesia in obstetrics; Jay Arthur Myers, Minneapolis, diagnosis and treatment of pulmonary tuberculosis; Walter C. Alvarez, Rochester, Minn., types of nervous indigestion, and Stanley Seeger, Milwaukee, treatment of burns. ——Dr. Kellogg Speed, Chicago, was guest speaker before the Ninth Councilor District Medical Society, Wausau, November 8, on "Unhappy Results in Treatment of Fractures."

GENERAL

Dr. Adams Elected President of Chemical Society.—Roger Adams, Ph.D., since 1926 head of the department of chemistry, University of Illinois, Urbana, has been chosen president of the American Chemical Society. Professor of chemistry at the school since 1919, Dr. Adams' special interest has been in organic chemistry, particularly local anesthesia and chaulmoogra oil derivatives. He was associate editor of the *Journal of the American Chemical Society* for many years and was awarded the William H. Nichols Medal in 1927. Dr. Adams was a member of the Federal Committee on Synthetic Drugs during the World War.

Society for Study of Arthritis.—The fifth annual meeting of the American Society for the Study of Arthritis was held in New York, December 8, with the following program:

Dr. Reginald Burbank, New York, Brief Historical Résumé Leading to the Present Concept of Arthritis.
Drs. William H. Park and Anna W. Williams, New York, Bacteriology of Rheumatoid Arthritis and Allied Conditions.
Dr. Lazaros G. Hadjopoulos, New York, Correlation of Findings in Specific Etiology of Rheumatoid Arthritis.
Allan Winter Rowe, Ph.D., Boston, Disturbed Liver Function as a Complication in Arthritis.
Dr. Charles F. Tenney, Jr., New York, Artificial Fever Produced by the Short Wave Radio and Its Therapeutic Indications.

Association for Advancement of Science.—At the winter meeting of the American Association for the Advancement of Science in Boston, December 27-30, the section on medical sciences will devote the first two days to symposiums on pneumonia, sociology and medicine, tuberculosis, appendicitis and typhoid carriers. The section will meet jointly with the American College of Dentists, December 29, and with the American Society of Parasitologists, December 30. Dr. Charles R. Stockard, New York, vice president for the section, will deliver his address Wednesday morning, December 27, on "The Internal Secretions and Genetic Quality in Structural Development."

Dr. Jessup Becomes President of Carnegie Foundation.—Walter Albert Jessup, LL.D., has resigned as president of the State University of Iowa to become president of the Carnegie Foundation for the Advancement of Science, it was announced, December 13. Henry S. Pritchett, LL.D., president emeritus of the foundation, has been acting president of the foundation since the death in September of Henry Suzzallo, Sc.D. Dr. Jessup became dean of the College of Education at Iowa in 1912, having been associated with the University of Indiana in a similar capacity. He became president of the University of Iowa in 1916. His resignation is expected to become effective, May 1, 1934.

Student Health Association.—The fourteenth annual meeting of the American Student Health Association will be held in Chicago, December 28-29, at the Hotel Stevens, under the presidency of Dr. Dean F. Smiley of Cornell University, Ithaca, N. Y. The program includes addresses by the following physicians:

Dr. Alfred Adler, New York, Individual Psychology and Education.
Dr. Jay Arthur Myers, Minneapolis, Treatment of Tuberculous Students.
Dr. Arville O. DeWeese, Kent, Ohio, Adjustment of Instruction in College Hygiene to the Informational Level of Students.
Dr. Edward V. L. Brown, Chicago, Eye Problems of Students.
Dr. William G. Leaman, Jr., Philadelphia, The Heart and Athletics.
Dr. Elizabeth E. G. Whitney, San Francisco, Personality Problems of College Women.
Dr. Robert T. Legge, Berkeley, Calif., Development of Facilities to Remedy Physical Defects at Student Rates.
Dr. Oliver S. Ormsby, Chicago, Common Skin Diseases and Their Diagnosis.
Dr. Gladys Dick, Evanston, Ill., Control of Scarlet Fever Among Adults.
Dr. Harold D. Palmer, Philadelphia, Mental Hygiene Problems in a University.

There will be a symposium on prevention and treatment of athletic injuries, presented by Drs. Joseph E. Raycroft, Princeton, N. J.; Marvin A. Stevens, New Haven, Conn., and Lewis K. Ferguson, University of Pennsylvania. At the annual association luncheon, Thursday, December 28, Dr. Morris Fishbein, Chicago, editor of THE JOURNAL, will speak on "Student Health Service and the Medical Practitioner."

Society News.—Dr. Hugh Leslie Moore, Dallas, Texas, was elected president of the Southern Medical Association to succeed Dr. Irvin Abell, Louisville, Ky., at the annual meeting in Richmond, Va., November 17. Vice presidents elected were Drs. Fred M. Hodges, Richmond, and Thomas A. Groover, Washington, D. C. The 1934 session of the association will be held in San Antonio, Texas.——Dr. Arville O. DeWeese, director of student health service, Ohio State College, Kent, Ohio, was elected president of the American Association of School Physicians at the annual meeting in Indianapolis in

October. Dr. William A. Howe, Albany, N. Y., is secretary. —The next annual meeting of the National Tuberculosis Association will be held in Cincinnati, May 14-17, 1934. Saranac Lake has been designated the place for the session in 1935. —The American Social Hygiene Association has recently conducted a series of institutes for Negro physicians for demonstration of technic in diagnosis and treatment of syphilis in Savannah, Ga.; Charleston, S. C., and Jacksonville, Fla. Dr. Walter J. Clarke of the New York staff directed the institutes in cooperation with local health and medical authorities.——Dr. William S. Middleton, Madison, Wis., was elected president of the Central Society for Clinical Research at its recent meeting in Chicago. Dr. Lawrence D. Thompson, St. Louis, was reelected secretary.

Bequests and Donations. — The following bequests and donations have recently been announced:

Central Maine General and St. Mary's General hospitals, Lewiston, Maine, $5,000 each by the will of Edward H. Delano of Lewiston.

Harvard Medical School, Boston, $50,000 under the will of the late Dr. Jeremiah J. Corbett.

Presbyterian Hospital, $121,647, and New York Post-Graduate Hospital and Medical School, $30,000 by the will of the late William Colgate.

Montefiore and Sydenham hospitals, New York, $5,000 each by the will of the late Henry A. Dix.

Hospital of the Servants for Relief of Incurable Cancer, Hawthorne, N. Y., $50,000 under the will of the late Rebecca O. Burchinal.

Presbyterian Hospital, Philadelphia, and West Jersey Homeopathic Hospital, Camden, N. J., $5,000 each under the will of the late Mrs. Edith B. Cunningham, Philadelphia.

Mount Carmel Hospital, Columbus, Ohio, $4,000; Children's Hospital and Franklin County Sanatorium, $1,000 each by the will of the late Elizabeth F. Schmidt.

Mansfield General Hospital, Mansfield, Ohio, $10,000 by the will of Charles A. Ritter.

Episcopal Hospital, Philadelphia, $2,000 under the will of Marianna B. Griffiths.

Huron Road Hospital, Cleveland, $100,000 by the will of Mrs. Mary E. Wickham.

St. Luke's and St. Mary's hospitals, Duluth, Minn., $7,000 and $5,000, respectively, by the will of the late August Fitger.

Lenox Hill Hospital, New York, $25,000 by the will of the late Heinrich E. F. Sandhagen.

Middlesex General Hospital, New Brunswick, N. J., and Morristown, N. J., Memorial Hospital, $5,000 each by the will of Mrs. Caroline McBain Johnson.

Memorial, St. Luke's and Children's Homeopathic hospitals, Philadelphia, $2,000 each, and Northeastern Hospital, $1,000 under the will of John Henry Gallati.

Stuyvesant Square Hospital, $5,000, and St. Vincent's Hospital, New York, $2,500, from the estate of Raymond Blackwood.

University of Pennsylvania, Philadelphia, $10,000 under the will of the late Mrs. Louise M. Holroyd, for cancer research.

Orthopedic Meeting.—The second annual meeting of the American Academy of Orthopedic Surgeons will be held at the Palmer House in Chicago, January 8-10. The first day will be devoted to seminars, the second to papers and the third to clinical presentations of cases and end-results. There will be symposiums on fractures, bone tumors, and equalization of lengths of legs. Conducting seminars will be Drs. Lewis J. Pollock, Chicago; Carl Wiggers, Cleveland; George E. Brown, Rochester, Minn.; Mont R. Reid, Cincinnati; Louis G. Herrmann, Cincinnati; Géza De Takáts, Chicago; Earl R. Carlson, New York; Walter O. Klingman, New York; Dallas B. Phemister, Chicago, and Richard H. Jaffe, Chicago. Papers will be presented by the following physicians:

Frank E. Curtis, Detroit, Decancellation of Os Calcis, Cuboid and Astragalus for Correction of Club Foot.

Walter Bauer, Boston, Blood Calcium Studies in Orthopedic Conditions, Including Parathyroid Disorders.

Garry De N. Hough, Jr., Springfield, Mass., End-Results of Study of 130 Cases of Hip Flexion Deformity Due to Poliomyelitis.

Naughton Dunn, Birmingham, England, Stabilization Operations in Poliomyelitis, with Especial Reference to Feet.

Arthur Steindler, Iowa City, Pott's Paraplegia.

Lemuel D. Smith, Milwaukee, Fractures of the Femoral Shaft. Maintenance of Reduction and Fixation by Means of Drilled Metal Skewers. Immediate and Continued Ambulation.

Joel E. Goldthwait, Boston, Recognition of Skeleton Atrophy in the Cause and Treatment of Fractures of the Spine and Hip, with Especial Reference to Nonunion.

John D. Camp, Rochester, Minn., Roentgenographic Evidence of Spinal Cord Tumors and Bone Lesions Due to Parathyroid Disturbances.

Marius N. Smith-Petersen, Boston, Internal Fixation of Fractures of the Neck of the Femur.

Henry Heyward Wescott, Roanoke, Operation for the Internal Fixation of Transcervical Fractures of the Femur.

Ralph K. Ghormley, Rochester, Minn., Low Back Pain with Sciatica. "The Facet Syndrome."

John S. Coulter, Chicago, Local Applications of High Frequency Current (Medical Diathermy).

Dr. Morris Fishbein, Chicago, will be toastmaster at the banquet and make the presentation of a medallion to the outgoing president, Dr. Willis C. Campbell, Memphis, Tenn. Gordon J. Laing, LL.D., Chicago, will speak following the banquet on "The Medicine Man, Ancient and Modern—Are Doctors Human?"

FOREIGN

Society News.—The French Medical and Scientific Alliance was recently founded by physicians interested in research for the purpose of holding meetings of research workers, honoring those whose work contributes to progress in medicine and encouraging young workers to devote themselves to research. Information concerning the new society may be obtained from Dr. Claoué, 39, rue Scheffer, Paris 16.

Eastman Dental Clinic in Brussels.—The cornerstone for the George Eastman Dental Institute of Brussels was laid at a ceremony, October 20. Dave H. Morris, American ambassador to Belgium, and Harvey J. Burkhart, D.D.S., representing the Eastman interests, were present as Queen Elizabeth signed the charter and sealed it in the cornerstone. It is expected that the building will be completed in 1934.

International Congress on Rheumatism.—The fourth International Congress on Rheumatism will be held in Moscow, May 3-6, 1934. Subjects to be discussed are: clinical aspects of rheumatic fever; indications for balneologic treatment of rheumatic patients; rheumatism in transport workers, mine workers and metal workers, and the occupational factor in rheumatic diseases in the light of experimental results. Further information may be obtained from the headquarters of the International League Against Rheumatism, Keizersgracht 489, Amsterdam, Holland.

Publications on Malaria Wanted. — The director of the Central Malaria Library created by the Stazione Sperimentale per la Lotta Antimalarica in 1925 requests that all malariologists send to it books, reports and articles on malaria in order that the library may be made as complete as possible. Photostat copies of any articles in the library may be obtained at the cost of production. All publications and requests should be addressed to the Director at the station, Corso Vittorio Emanuele, 168, Rome (116). In addition to the photostat service, the station issues each year an index to malaria literature.

Personal.—Prof. Jules Gonin, Lausanne, France, received the William Mackenzie Medal of the Royal Faculty of Physicians and Surgeons, Glasgow, October 13, in recognition of his contributions to ophthalmology, especially in the treatment of detachment of the retina. He delivered the William Mackenzie Memorial Lecture on "The Evolution of Ideas Concerning Retinal Detachment Within the Last Five Years."—— Dr. Richard Atkinson Stoney, Dublin, has been elected president of the Royal Academy of Medicine of Ireland, succeeding Dr. Thomas G. Moorhead.——Dr. R. F. Guymer, Surrey, England, received the Sir Charles Hastings Clinical Prize for 1933, awarded by the British Medical Association, for a study entitled "Tonsillectomy—Before, During and After."

Government Services

Federal Medical Relief and Employees' Compensation

A new phase of governmental entrance into the practice of medicine has developed by a gradual evolution. First came payment for medical services, but not for hospital services, for destitute unemployed persons, by the federal government, through state relief administrations. Next, destitute unemployed persons were put to work, on state payrolls, through grants of federal money, at wages assumed to be sufficient to enable them to provide medical and hospital services for themselves and their dependents. Now these employed men, estimated at two million in number, are transferred to federal payrolls—and two million more men will be added. The wages are regarded as sufficient to enable the workers to live in decency and comfort, yet they receive also the medical and hospital benefits conferred on federal employees by the United States Employees' Compensation Act of 1916, for diseases and injuries arising out of the performance of duty.

The Federal Emergency Relief Act, approved May 12, 1933, created the Federal Emergency Relief Administration, charged with the duty of making grants to the several states to aid in meeting the costs of furnishing relief and work relief and in relieving the hardship and suffering caused by unemployment. By the National Industrial Recovery Act, approved June 16, 1933, a Federal Emergency Administration of Public Works was authorized to prepare a comprehensive program of public works, including projects of the character theretofore constructed or carried on either directly by public authority or with public aid, to serve the interests of the general public and, with a view to increasing employment, quickly to construct,

finance or aid in the construction or financing of any public works project included in the program thus prepared. Because of the magnitude and the nature of the task assigned to the Federal Emergency Relief Administration of Public Works, unexpected delay occurred in putting to work, for the purpose of increasing employment, the money that had been provided for that purpose. The President, therefore, November 7, created the Federal Civil Works Administration and appointed Harry L. Hopkins as Federal Civil Works Administrator. Mr. Hopkins occupies also the position of Federal Emergency Relief Administrator. To the newly created Federal Civil Works Administration the Board of the Federal Emergency Administration of Public Works allocated from public works funds $400,000,000, to enable it to provide regular work on public works, at regular wages, for unemployed persons able and willing to work. Employees under this plan are to be hired by state and local civil works administrations set up by the administrator as federal agencies, without investigations into the financial status of the persons employed, in an effort to meet the needs of the many destitute unemployed men and women who are willing and eager to work but who are not willing to have their names entered on relief rolls.

The four million men and women hired by the Federal Civil Works Administration are to be employed on projects of a character heretofore carried on by public authority or with public aid, to serve the interests of the general public. The projects undertaken must be of such a character as to be socially and economically desirable and must be susceptible of being undertaken quickly. They are described by Public Works Administrator Ickes as projects on the borderline of public works. Among the projects suggested are the construction of parks and play grounds, the repairing of roads, the building of feeder roads, the extending of sewer systems and water mains, and general activities in the field of sanitation, exclusive of such work as collecting garbage, cleaning streets, removing snow and cleaning parks. While the work is to be decentralized as far as practicable, the agencies, state and local, through which it is undertaken are to be regarded as federal agencies, and the money used for the work, a part of a federal appropriation, is to be disbursed by federal officers. The money used in any state is not a grant to the state, but, in determining the amount that is to be expended in any state, a formula is to be employed that takes into consideration the population of the state and the number of persons on the relief rolls. The expenditure of this appropriation within a state will not prevent the allocation of federal funds to that state for direct relief.

Wage rates are to vary. No maximum rates are fixed. The minimum rate for unskilled labor in the South is 40 cents an hour and in the North 50 cents an hour. In the South, skilled labor is to receive not less than $1 an hour, and in the North not less than $1.20. Rates of pay must in any event be such as will, with a thirty hour week, enable an employee to live in decency and comfort. These wages, it is assumed, will enable every employee to pay for such medical service as may be needed by him and those dependent on him. If, however, an employee because of the stress of circumstances is unable to do so, he may apply to the state or local emergency relief administration for aid, including medical services. Since employees on the rolls of state and local civil works administrations are hired by and through federal agencies and paid from a federal appropriation, they are within the purview of the Federal Employees' Compensation Act and are entitled to medical and hospital services at government expense if they are injured or develop disease in the course of their employment. The administration of that act as it applies to these employees is under the United States Employees' Compensation Commission and the rules applicable to compensation for federal employees generally are applicable with but slight modifications to employees on the rolls of the Federal Civil Works Administration.

Employees are entitled to treatment for only such injuries as they sustain in the performance of duty and for occupational diseases. Diseases that do not show a direct causal relationship to the employee's work, and injuries not sustained in the performance of duty, do not entitle the employee to medical and hospital treatment at public expense. The fact that a disease develops while an employee is engaged on a civil works project is not of itself sufficient to entitle him to treatment. If there is doubt as to whether the disability of an employee is due to an injury sustained in the performance of duty or to disease contracted in that manner, the local civil works administrator is to send the disabled employee to a United States medical officer or to a designated physician, with a request for treatment, and is to take immediate steps to determine the origin of the disability. Reasonable medical, surgical and hospital services and supplies are to be provided, and such transportation as is necessary to that end. Government regulations contemplate treatment at medical establishments maintained by the federal government. Where adequate federal medical facilities are not available, other public medical facilities, state, county or municipal, may be utilized. The United States Employees' Compensation Commission has designated, too, some four thousand physicians to render medical treatment where no government establishments are available. Where either government medical facilities or such designated physicians are available, they must be employed. Where they are not, local civil works administrators may arrange for medical care by such reputable physicians as will agree to charge only stipulated fees. Physicians designated by the Federal Employees' Compensation Commission and private physicians and hospitals specially employed are to be paid fees not in excess of those charged patients in the same income class as the injured person. Osteopaths and chiropractors may be employed only when recommended by the government or by designated physicians. The Federal Employees' Compensation Commission keeps postmasters and the larger establishments of the federal government informed concerning government and designated medical facilities and any official or employee can obtain information concerning them from the local postmaster.

An employee may refuse the medical or hospital treatment proffered by the government, but if he does so the government will not pay for the medical or hospital services that he provides for himself. An employee treated by his private physician or in a private hospital selected by him must report from time to time to a United States medical officer or to an officially designated physician, for examination to determine whether or not his disability continues. An injured or ill employee seeking treatment at government expense must leave with the physician or hospital from whom he receives service a written request from the local civil works administrator that such service be rendered, and a blank voucher. Bills for service cannot be paid in the absence of such authority. If it has been impracticable, however, for an employee to obtain such a request, a medical officer or a designated physician may give temporary treatment, provided proper authorization be obtained from the employee's official superior within forty-eight hours. Unless such authorization is obtained, the medical officer or designated physician has no authority to give further treatment at public expense. Vouchers for services, accompanied by a copy of the official request for them, are to be transmitted to the Federal Employees' Compensation Commission for settlement. A separate voucher is to be submitted for each employee treated, on the form provided for that purpose. Vouchers should be verified by the signature of the employee whenever practicable, and in all cases they must be certified by the local works administrator.

Physicians desiring to have their names placed on the list of physicians authorized by the Federal Employees' Compensation Commission to treat federal employees suffering from injuries or diseases caused by the discharge of their duties, in places where United States hospitals and dispensaries are not available or are inadequate, should make application to the Federal Employees' Compensation Commission, at Washington, D. C. It has not been the policy of the Commission to designate an indefinite number of such physicians in any one locality, but changes are made necessary from time to time by deaths, resignations, and changes of physicians' residences, and with the present increase in the number of federal employees entitled to treatment, an increase in the number of designated physicians seems inevitable. It will be well, however, for any physician who contemplates accepting any such designation to learn the requirements of the commission with reference to examinations, treatment, records and reports, and to learn the rates of compensation allowed by the commission in his community, before he does so.

Toxicologist Wanted

The U. S. Civil Service Commission invites applications for toxicologist positions of various grades, to be filed before January 11. At present there is a vacancy in the position of assistant toxicologist in the Bureau of Chemistry and Soils, Department of Agriculture, with headquarters in San Francisco. The entrance salary for this position ranges from $2,600 to $5,400 a year, less a deduction of not to exceed 15 per cent as a measure of economy and a retirement deduction of 3.5 per cent. Competitors will not be required to report for a written examination but will be rated on their education and experience. Full information may be obtained from the Civil Service Board of Examiners at any postoffice or customhouse in any city or from the U. S. Civil Service Commission, Washington, D .C.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 2, 1933.

Synthetic Vitamins Versus Natural Foods

Dr. H. A. Harris, professor of clinical anatomy at University College and author of "Bone Growth in Health and Disease," has done research and shown that the transverse lines on the long bones, which are usually ascribed to rickets, are due to temporary cessation of growth. He criticizes in the *Times* the prescribing of synthetic instead of natural foods. He quotes a pioneer of physiologic chemistry, Prout, who in 1831 maintained, in his Goulstonian lecture, that "nature will not permit the chemist to officiate as her journeyman, even in the most trifling degree." Professor Harris thinks that before the community is asked to exchange natural cod liver oil, with its richness in vitamins A and D, for synthetic preparations, much more reliable information must be provided as to the effect of calciferol on the other stigmas presented by the rickety child. Milk, eggs, butter, cheese and adequate proteins rich in essential amino-acids are still required for the maintenance of growth and health in the child. There are no substitutes for a generous all round diet of fresh food. This is as fundamental as the second law of thermodynamics. Professor Harris holds that rickets is a disorder of growth, which appears essentially during the three main "springing up periods" of life —almost exclusively in the first two years of life, and rarely in the years associated with the eruption of the second teeth or with puberty. The infantile starvelings of the slums, with their chronic malnutrition, are not growing fast enough to acquire rickets. The extent of malnutrition cannot be gaged by the prevalence of rickets. The extent of the cure and healing of rickets cannot be gaged solely by the improvement in the roentgenographic appearance of the bones. Vitamin D probably does all that is wanted as regards calcification of cartilage and possibly even bone formation. This is true not only in human rickets but also in the "leg weakness" of chicks. But other vitamins are necessary for growth, normal development and resistance to infection.

The Minimum Necessary Expenditure on Food

Concern has been expressed whether in the present period of industrial depression the unemployed and the poorer paid workers are suffering from malnutrition—whether their purchasing power is sufficient to procure adequate food for themselves and their families. Socialist politicians, who are always bent on increasing the dole regardless of the consequences to the state, loudly proclaim that there is considerable malnutrition among the poor. Realizing the national importance of nutrition, the British Medical Association set up a special committee to determine the minimum weekly expenditure on foodstuffs that must be incurred by families of varying size, to maintain health and working capacity and to construct specimen diets. The committee included such well known dietitians as Dr. Robert Hutchison and Profs. S. J. Cowell and V. H. Mottram. It placed on record its regret that there exists no satisfactory routine method by which the nutritional condition can be assessed and the observations of different observers compared. The absence of a satisfactory standard of "normal nutrition" probably explains why so many divergent opinions are expressed as to the nutritional condition. The committee holds that 3,000 calories daily in the food as purchased is sufficient for the average man, provided his energy output is trifling. In Scotland it was found that 3,700 calories was necessary for prisoners doing moderately hard work. It might be argued that the unemployed man can keep healthy on 3,000 calories, but it is held doubtful whether he can maintain working capacity on this; the necessary number lies somewhere between 3,000 and 3,700. As some figure must be taken for purposes of calculation, the committee took 3,400 calories as purchased, which should assure 3,000 available calories. The figure is not a minimum nor, on the other hand, is it set up as an optimum. It is slightly lower than the "standard ration" for the army at home stations. The figure taken for an adult woman is 2,840. For children, Cathcart's table was followed. It begins with 1,020 for children aged 1 and under 2 years and rises to 3,060 for ages 12 to 14. It is laid down that from 10 to 15 per cent of the daily calories should be derived from protein (about 100 Gm.). Of this amount, 50 Gm. should be first class (i. e., animal) protein; the other half may come from vegetable sources. The amount of fat daily is laid down as 100 Gm., as much as possible from certain animal sources. The calories can be brought up to the 3,400 by 500 Gm. of carbohydrate, the cheapest source possible. With regard to vitamins, it is recommended that if there is any doubt as to their sufficiency in the dietary a few drachms of cod liver oil of certified vitamin content be included. This will insure the requisite amount of vitamins A and D.

Examination of working class budgets shows that the average housewife, with no knowledge of dietetics, purchases food which broadly approximates the dietaries of physiologists. When she has not enough money to buy what she wants, she avoids complaints of hunger from her family by buying less of expensive proteins and fats (such as butter) and more of the cheap carbohydrates—bread and potatoes. A common fault in the dietary of young children is shortage of first class protein.

The committee gives a large number of diets suitable for a man, wife and three children aged, respectively, 1 to 2 years, 2 to 3 years and 3 to 6 years. The cost works out at about $5 a week.

PARIS

(From Our Regular Correspondent)

Nov. 8, 1933.

Congress on Renal Insufficiency

Under the chairmanship of Professor Lemierre, the Congress on Renal Insufficiency met recently at Evian, with an attendance of more than 800. One rarely sees a scientific meeting at which a more complete development of a subject is secured. The subject for discussion was rather restricted; nevertheless, fifteen papers were presented, and each one dealt fully with its phase of the subject. Professor Castaigne and Dr. S. Chaumerliac discussed azotemias of extrarenal origin, of which they distinguished three types. Professor Villaret, Justin Bezançon and René Fauvert described the mechanical rôle of the liver in the conveyance and distribution of water through the organism. Mr. Isod Bennett of London analyzed the changes in blood calcium occurring in renal insufficiency. He attributed the diminution, which is constant, to the retention of phosphorus, which develops somewhat parallel to the retention of urea. Mr. Guy Laroche dealt with purely azotemic chronic nephritis, which, he thinks, is an indication for a diet low in nitrogen and for diuretic treatment. Professor Merklen of Strasbourg discussed recent research on chlorides in nephritis and the indications for rechloridation, which is indicated only in certain cases of acute nephritis with true leukopenia and an elevated or normal alkali reserve. It is indicated in the presence of repeated vomiting and diarrhea and has rendered more service to surgery than to medicine, even in the absence of nephritis. A paper by Prof. Charles Laubry and Mr. Walser on permanent arterial hypertension and disorders of renal functioning was one of the most important presented at the congress. The conclusion reached was that there is no necessary relation between these two conditions. Many cases of hyper-

tension are independent of all renal changes, functional or anatomic. Many renal attacks are not associated with hypertension. There are, however, cases in which the two states coexist; sometimes the hypertension precedes and sometimes it follows the nephritis. Only in the latter event can one speak of the relation of cause and effect; but such cases are rare. To summarize: Hypertension results from multiple causes; the kidneys may contribute to the condition but they cannot produce it by themselves. William S. Hoffman of Chicago considered the mineral metabolism in a number of cases of nephrosic edema and reviewed the relation of the changes in sodium potassium and chlorine to the water retention and the secretion of urine. The paper of Pasteur Valléry-Radot and Pierre Delafontaine dealt with tests of provoked diuresis in the exploration of renal insufficiency. Paul Savy, Henri Thiers and René Peycelon of Lyons gave a critical study on the treatment of anuria due to acute nephritis: intravenous injections of hypertonic solution of dextrose; venesection with transfusion of noncitrated blood; injections of hypertonic solution of sodium carbonate; rechloridation, and renal decapsulation. This was the paper that most interested the Société des eaux of Evian, which had organized this congress; but the assembled scientists devoted only one paper out of fifteen to this subject.

Congress on Photography in the Sciences

The Association pour la documentation photographique et cinématographique dans les sciences organized a congress, which met, October 7, in the halls of the Musée pédagogique. Photographic and cinematographic documentation are assuming an increasingly important rôle in biologic instruction. There is scarcely a meeting in which some speaker does not illustrate his paper with a film. Films showing bacteria as the causative agents of infectious diseases are frequently shown to the public, in motion picture houses. Progress has been made in this field by the adaptation of the motion picture to the microscope, and this congress furnished abundant proof of that fact. There was also an instructive exhibit of equipment. The congress was under the patronage of Mr. Comandon, who made at first film showing the spirochete of syphilis attacking the blood cells. Dr. Claoué and Mr. Jean Painlevé, son of the mathematician who became an eminent statesman and whose death has just been announced, promoted the congress. Mr. Comandon, at present attached to the department of inventions, exhibited one of his first films showing, in slow motion, the growth of vegetables. Mr. Yokota of Japan showed the movement of the intestinal contents in animals, the film having been made through an abdominal opening; Mr. Pascalis of Paris showed the technic of immediate reduction of recent fractures. Jean Painlevé presented the Daphnia and the sea-urchin, showing the possibilities of photomicrography in direct and in indirect light. Mr. Terrien illustrated his operation for cataract; Jacob Sarnoff of New York described, with the aid of a film, cultivation of tissues; de Lee of Chicago illustrated a cesarean operation; Jean Louis Faure explained a subtotal hysterectomy, and Mr. Garripuy of Toulouse showed a normal confinement and a Porro operation. Delherm, Thoyer-Rozat, Fishgold and P. Godet explained a new method of recording the movements of organs by means of roentgen rays, which enables one to study the heart beat. Dr. Gros of Cambrai spoke on the value of making photographic copies of rare books and protested against the heavy tax imposed on them, which often prevents bringing to the public interesting documents in the libraries.

Death of Professor Calmette

Prof. Albert Calmette, assistant director of the Institut Pasteur de Paris, died, after a brief illness, at the age of 70. He began his career as a ship's physician; then, in 1890, he entered the colonial medical service and almost immediately began to do research in the laboratory of Pasteur, who later sent him to Saigon to establish the first Pasteur institute in Indo-China. Calmette returned to France in 1893 and was appointed director of the Institut Pasteur in Lille; then, in 1919, he became assistant director of the Institut Pasteur de Paris, succeeding Metchnikoff. He was a member of the Academy of Medicine and of the Academy of Sciences and had been honored with the Grand Cross of the Legion of Honor. He was known throughout the world for his magnificent research on antivenom serum and preeminently for the B C G vaccine against tuberculosis. He was occupied, when death overtook him, in studying the effects of cobra venom in infinitesimal doses on experimental cancer. In 1911, he published his Traité d'hygiène.

French Congress of Otorhinolaryngology

The French Congress of Otorhinolaryngology was held in Paris. The chairman, Professor Chavanne of Lyons, in his address, emphasized the need of an extensive knowledge of general physiology and pathology in the training of the specialist, and deplored the fact that today diplomas in otorhinolaryngology are bestowed following the completion of short courses of a few weeks. Dr. Lafite-Dupont of Bordeaux presented a paper on the medical and general treatment of acute infections and septicemias in otorhinolaryngology. He discussed the use of serotherapy, vaccines, shock methods, fixation abscess, sodium nucleinate, colloidal metals, soaps, suprarenal organotherapy and radiotherapy, all applied after the focal infection has first been removed as completely as possible and after local vaccination according to the Besredka method. Laval of Toulouse, Barraud of Lausanne, Moreaux of Nancy, Portmann of Bordeaux, Mignon of Nice, and others, presented special communications on the same subject. Louis Leroux, Mr. Baldenweck and Mr. Canuyt discussed the interventions in phlegmons of the tonsils and the tonsillar region. Mr. Ramadin presented a paper on the second topic, "Deep Osteitis Petrosa." He discussed the anatomic conditions that favor extension of the infection to the meninges, the possible localization of the osteitis, the habitual slowness of the evolution, and the treatment, which should always be surgical and succeeded by drainage. This paper was followed by a general discussion. Other communications were devoted to posttraumatic deafness (Maurice Bouchet), superior tracheotomy (Gault), early diagnosis of cancer of the esophagus and radium therapy (Guisez), and sinusitis.

BERLIN

(From Our Regular Correspondent)

Nov. 6, 1933.

Reorganization of German Spas

Although balneology in Germany is far advanced, there has been a lack of unity in the relations of the scientific societies. It was evident that a reorganization was needed, and Prof. Dr. H. Vogt of Pyrmont was entrusted with the task. The Deutsche Balneologische Gesellschaft, of which Vogt has been made chairman, will bear, in the future, the name Deutsche Gesellchaft für Bäder- und Klimakunde. It will be the representative scientific organization of the region and will promote balneologic and climatologic science to as high a level as possible. A close contact will exist also with the fundamental branches of medicine. A further task is the supplying of additional training for spa physicians in scientific, practical and ethical matters. The annual assemblies will therefore no longer be held in spas or health resorts but in winter (when patients make fewer demands on their time) in association with universities, clinics and hospitals, or in collaboration with other large scientific societies. Courses of lectures will be organized in the medical societies of the large cities on balneologic and climatologic subjects. A scientific committee for the advance-

ment of balneology and climatology will be created, which will give advice to the directorate in professional matters. The Standesverein der reichsdeutschen Badeärzte will continue to function; likewise the Deutsche Gesellschaft für Rheumabekämpfung. The need of greater uniformity and a more centralized organ has given rise to a new journal, *Der Balneologe*, the first number of which will appear January 1 (Prof. Dr. Vogt, editor; Julius Springer, publisher).

Nature Cure Societies and the Medical Profession

The nature cure physicians are coming in the "third reich" more to the front than formerly. Not only have the nature cure practitioners formed an organization characterized by reasonable uniformity with special spokesmen for various specialties, but the new leadership of the medical profession has taken a different attitude toward them (THE JOURNAL, December 9, p. 1892). A new decree of the commissar of the public health service of the Free State Saxony is illustrative of this new trend: "After the victorious triumph of the national-socialist revolution and the assumption of leadership by the national-socialist league of physicians in all questions pertaining to public health, it becomes the duty of the medical profession under national-socialist leadership to study more intensively and in a more scientific manner the theories and teachings of the followers of popular medicine. What previous generations of physicians have neglected, we as national-socialists must seek to remedy. I therefore decree for the members of the national-socialist league of physicians of Saxony that they must seek membership in the nature cure associations, homeopathic societies, biochemical societies, Kneipp societies and the like and acquaint themselves in the atmosphere of these societies with the curative methods of popular medicine."

The Age Groups in Health Insurance

According to a report of the federal bureau of statistics, the number of benefit claims of all kinds arising in 1931 in 698 federally organized krankenkassen was 133.2 for each hundred men and 142.1 for each hundred women. Whereas, among the men, the youngest age group 14-19 presented claims equal in number to about the average number of members in that group, the next following age groups, 20-24 and 25-29, presented claims equal to 13.5 and 5.3 per cent, respectively, in excess of the number of members belonging to those groups. In the age group 30-34 the benefit claims arising during the year were less than the total number of members in that group. From then on there is a gradual reduction, the lowest figures being reached in the oldest age groups, 65 and beyond, which lie 12.0 and 19.4 per cent under the average number of members. The relatively slow reduction in the 50-65 age group shows an acceleration in the group above 65 years of age. That may be due to the fact that persons who after the age of 65 are still pursuing gainful occupations constitute a group that is in a peculiar manner productive and resistant. The benefit claims presented by the women members of the krankenkassen show a similar development but with more marked differences in the various age groups. The age group presenting the largest number of benefit claims does not go so far beyond the average number of members in the group as does the corresponding group among the men, but the women of the 20-35 age group report sick more frequently than the average. From then on there is a gradual decline in the number of benefit claims, which is interrupted by an increase during the climacteric (50-54 age group). After that, the number of benefit claims presented by the women members decline more rapidly than in the men of corresponding age. The number of cases of incapacity for work, per hundred benefit claims, arising in the various age groups, show slight fluctuations other than in the two oldest age groups of the men. In general, there were among the men 29.9 cases of incapacity for work, per hundred benefit claims, and, among the women, 25.1 cases of such incapacity. Up to age 65, the women presented fewer days of incapacity for work than the men.

According to reports of 166 communal krankenkassen, the total number of members as of Sept. 1, 1933, was 4,538,845, of which number 2,422,528 were men and 2,116,317 were women. On that date the percentage of members incapacitated for work was 2.68, or 2.31 per cent among the men and 3.06 per cent among the women.

VIENNA

(From Our Regular Correspondent)

Nov. 3, 1933.

Abandons Cutaneous Tests in Hay Fever

At a recent session of the Vienna Medical Society, Dozent Dr. Urbach discussed modern methods of treatment in the troublesome condition known as pollinosis, or hay fever. Successful diagnosis and treatment presuppose an accurate knowledge of the plants of a given region and the time of their florescence. Dr. Urbach recommends the creation of a hay fever calendar, in which one can record the time of florescence of all the plants of a given region that are known to be involved in the production of hay fever. The disease-producing substance is the protein contained in the pollen, although some authors contend that it is the fat substance of the pollen. Doubtless the offending toxin is attached chiefly to the globulin. Many patients are affected by the perfumes, or emanations, from the blossoms. It is interesting that hypersusceptibility to pollen is transmissible. In making an examination to discover the specific susceptibility of a patient, Dr. Urbach applies a tampon of cotton saturated with a fresh 20 per cent aqueous pollen extract to the mucosa of the nasal septum and leaves it five minutes in situ. He has abandoned the "cutaneous test." If the nasal septum test is positive, an acute catarrhal condition of the nasal mucous membrane, attended with a discharge from the nostrils, develops and continues for from five to fifteen minutes. In central Europe, testing with grass pollen extracts is usually sufficient; in many other regions the pollen of tree, bush and flower blossoms must be included. Dr. Urbach no longer uses for treatment the subcutaneous injection, such as was formerly in vogue, but applies a peroral method. In order that researches in this field may be prosecuted on a large scale, the ministry of agriculture has placed at the disposal of the Vienna dermatologic clinic (where Urbach is carrying on his experiments) a large terrain, near Vienna, with many plowed fields in the immediate vicinity, in order that the allergic laboratory of this clinic may obtain sufficient grass and blossom material with which to combat in an active manner this now so frequent disease.

The Treatment of Myoma

In one of the regular lectures at the Vienna "medical seminar," Professor Halban described the treatment of myomas that is followed by nearly all the leading gynecologists of Vienna. Speaking generally, a much less energetic treatment is applied today to myomas than formerly, for it is now known that they are relatively harmless tumors, which frequently occasion little or no discomfort. Only in the event of pronounced indications is active treatment advisable. As such indications may be considered, primarily, hemorrhages, menorrhagia or metrorrhagia; in such cases hydrotherapeutic treatment, hot vaginal lavages and ergotine preparations will usually give good results. But if conservative treatment fails, a surgical operation or irradiation is to be considered, Professor Halban usually preferring the former. Such an intervention will reveal whether possibly a hidden neoplasm is causing the hemorrhages. In the case of larger myomas, curettage is of

no avail; the results are uncertain, and hence it is to be rejected. The statistics for Vienna show, in 2 per cent of the cases, a combination of myoma with carcinoma of the cervix; in 2.4 per cent, a combination with carcinoma of the corpus uteri, and in 1.2 per cent, a combination with sarcoma. Pains associated with myoma arise often as a result of tension, pressure or necrosis, which affect the tissues adjacent to the tumors. If conservative methods are not soon effective, it is advisable to resort soon to an operation or to irradiation. Fever usually develops when necrotic processes or secondary infections of the myoma nodules appear, and it constitutes an indication for operation. The size of the myoma is not usually an indication; the essential thing is the amount of discomfort it causes. The situation is different if the myoma is growing rapidly, as this fact justifies the suspicion of a neoplasmic degeneration and points to operative removal, even though no essential pain or discomfort is complained of. In spite of multiple and large tumors, conception is possible. Active intervention is therefore necessary only in case a pregnancy is desired but does not occur after a long period and there is no other apparent cause for the sterility. The combination of myoma and pregnancy is not regarded as an indication for operation, if the pregnancy is taking a normal course. Only in case pain (through rapid growth of the myomas) or fever (necrosis) occurs should the myoma be removed—possibly in a conservative manner, in order not to embarrass the pregnancy. If the myoma constitutes a hindrance to birth, it should be removed intra partum. If the myoma produces a tendency to miscarriage, it should be operated on. So-called remote effects of a myoma are not infrequent; for instance, gastrointestinal disturbances, headache, even epileptiform conditions, which completely disappear after an operation. Professor Halban holds the view that it is justifiable to remove myomas if the abdomen must be opened for any other cause, provided the intervention is not thereby delayed too long. This indication is applicable especially to women who live in remote regions where suitable aid cannot be promptly secured. These are, then, in general, the criteria that justify the attending physician in abandoning conservative treatment of myoma. If none of the indications mentioned are in evidence, a myoma should not be operated on or irradiated.

Operation for Endarteritis Obliterans

Thrombo-angiitis obliterans or endarteritis obliterans has been but little subjected to operative therapy. Dr. Mandl presented at the last session of the Gesellschaft der Aerzte a patient, aged 34, who for fourteen years had suffered from pain and from intermittent claudication in the left leg. An ulcer appeared, which refused to heal, so that a Leriche operation on the femoral artery was performed. Nevertheless, amputation of the toes became necessary, and later the lower leg had to be removed. In 1930 the right leg became involved in the same manner. A Leriche operation was performed, but the result was not satisfactory. The pulse could be found in the dorsalis pedis only at times, and the pain continued. Dr. Mandl decided to perform a retroperitoneal central sympathicus operation (after Royl, Adson-Brown, Stahl). He pushed the abdominal organs to one side, also the ureter, and reached retroperitoneally the anterior surface of the vertebral column, where he removed the ganglions of the sympathetic nerve, together with the truncus sympathicus, from the second to the fifth lumbar vertebra. The result, after eight months, is still excellent; the pulse of the dorsalis pedis is strong and continuous; the trophic ulcer, which had become very large, healed completely within six weeks, while the foot is warm. Of course, one cannot speak of a permanent recovery.

During the discussion, Dr. Starlinger of the second surgical clinic reported three cases in which this method of treatment was applied and in which the results are still good after seventeen, fourteen and seven months, respectively. He emphasized that in this operation careful hemostasis and ligation of the minute lumbar veins are necessary.

The Increase of Medical Students

The rector of the University of Vienna has announced that the winter semester has brought a marked increase in the number of students. As compared with 1,200 new entrants in the summer semester of 1933, there have been, thus far, 1,500 new entrants enrolled for the winter semester. The lecture halls are entirely inadequate for the large number of lectures. For instance, the first medicochemical institute, which must be attended by the first and second year medical students, can furnish the facilities only by holding an overflow session in another hall, in which the lecture of the professor delivered in the regular auditorium is made available to the overflow session by means of loud speakers, while an assistant performs the corresponding experiments and gives the demonstrations. In spite of warnings, the increase in the ranks in medicine are constantly increasing, possibly because the other liberal professions offer in our small country still less chance of success. The university authorities are compelled greatly to limit the number of foreign students matriculating for the first two years of the medical course, in order to reserve for Austrian students the facilities in the institutes and the classes in anatomic dissection.

Progress of Cremation in Vienna

In 1922, an ordinance was passed in Vienna permitting human bodies to be cremated instead of being buried in a cemetery. Previously, up to the time of the revolution that grew out of the war, ecclesiastical and political considerations had exerted greater influence than arguments based on reason. The first year after the establishment of the Vienna crematory, Feb. 17, 1923, 835 bodies were cremated and the ashes placed in suitable urns. The following year, 1,424 bodies were cremated; the next year, 1,880, and since then there has been a steady increase, so that now from 12 to 15 per cent of all dead bodies are cremated, or about 3,500 annually. At first the Jewish clergy raised objections to cremation, but these objections have been withdrawn. Before a body can be cremated, permission must be secured at the central police station, in order to prevent criminals from destroying traces of their crime.

Marriages

WILLIAM RAY MCGINTY, Moultrie, Ga., to Mrs. Mynelle Marsh of Jacksonville, Fla., at St. Augustine, Fla., October 29.

EARL W. BAILEY, Bunker Hill, Ind., to Miss Mildred M. Fish of Toledo, Ohio, in Lucky, Ohio, November 29.

GEORGE GLASGOW CHILES, Sanford, N. C., to Miss Mae McCleur Gilmore of Olney, Md., November 16.

SAMUEL T. BUCKMAN, Wilkes-Barre, Pa., to Miss Catherine Jones of Glen Summit Springs, August 10.

PAUL THOMAS MCBEE, Bakersville, N. C., to Miss Ivy Sandy of Burkeville, Va., October 25.

JESSE MCCALL, Tazewell, Va., to Miss Louise Richardson Pregnall of Richmond, November 18.

HARRY JOHN FAUSEL to Miss Lydia A. Schmidt, both of Chicago, at Cincinnati, November 30.

WILLARD B. CARPENTER to Miss Margaret W. Fisher, both of Columbus, Ohio, November 30.

ROBERT DONNELL HAIRE to Miss Mary Ethel Gilbert, both of Roswell, N. M., November 14.

WILLIAM E. BROWN to Miss Sara Price, both of Macon, Ga., October 14.

Deaths

Benjamin Franklin Zimmerman, Louisville, Ky.; Louisville Medical College, 1901; member of the Kentucky State Medical Association and fellow of the American College of Surgeons; past president of the Jefferson County Medical Society; assistant clinical professor of surgery, University of Louisville School of Medicine; served during the World War; on the staffs of the City, Deaconess, SS. Mary and Elizabeth hospitals and the John N. Norton Memorial Infirmary; aged 60; died, November 10, of heart disease.

Samuel Harley Lyle, Franklin, N. C.; University of Nashville (Tenn.) Medical Department, 1883; Vanderbilt University School of Medicine, Nashville, 1893; member of the Medical Society of the State of North Carolina; fellow of the American College of Surgeons; president of the Macon-Clay Counties Medical Society; formerly member of the county board of education and state legislature, and mayor; proprietor of a hospital bearing his name; aged 72; died, November 14, of heart disease.

Harry Burchard Ballou ⊕ Mansfield Depot, Conn.; University of Minnesota College of Homeopathic Medicine and Surgery, Minneapolis, 1905; member of the American Psychiatric Association and the New England Society of Psychiatry; past president of the Tolland County Medical Society; on the staff of the Mansfield State Training School and Hospital; aged 57; died, November 27, of myocarditis and angina pectoris.

James Cole Hancock ⊕ Brooklyn; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1889; member of the American Academy of Ophthalmology and Oto-Laryngology; fellow of the American College of Surgeons; consulting ophthalmologist to the Brooklyn State and Coney Island hospitals; aged 68; died, November 27, of heart disease.

Noble Price Barnes ⊕ Washington, D. C.; Baltimore Medical College, 1893; fellow of the American College of Physicians; formerly associate professor of materia medica and therapeutiçs, George Washington University School of Medicine; for many years on the staff of the Casualty Hospital; aged 62; died, November 26, of cerebral hemorrhage.

Nathaniel Pierce Walker ⊕ Milledgeville, Ga.; University of Georgia Medical Department, Augusta, 1901; member of the American Psychiatric Association; past president of the Baldwin County Medical Society; aged 53; for many years on the staff of the Milledgeville State Hospital, where he died, November 20, of pulmonary tuberculosis.

Dero Eugene Seay, Dallas, Texas; Vanderbilt University School of Medicine, Nashville, Tenn., 1896; member of the State Medical Association of Texas and the American Academy of Ophthalmology and Oto-Laryngology; fellow of the American College of Surgeons; on the staff of St. Paul's Hospital; aged 59; died, November 16.

Charles Christian Gethman ⊕ Eldora, Iowa; State University of Iowa College of Homeopathic Medicine, Iowa City, 1893; past president of the Hardin County Medical Society; member of the city council and school board; formerly county coroner; aged 70; died, September 3, in the University Hospital, Iowa City, of diabetes mellitus.

Ossian J. West, Seattle; Willamette University Medical Department, Salem, 1889; member of the Washington State Medical Association and the American Society of Clinical Pathologists; formerly on the staffs of the Providence, Columbus, Minor and Harbor View hospitals; aged 67; died, September 17, of hypernephroma.

Paul Whitehurst Greene, Retreat, Pa.; University of Maryland School of Medicine, Baltimore, 1900; member of the Associated Anesthetists of the United States and Canada; medical superintendent of the Retreat Home and Hospital for Chronic Diseases; aged 53; died, October 29, of chronic myocarditis.

Robert John Gardiner, Kingston, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1891; professor of medical jurisprudence and assistant professor of surgery at his alma mater; fellow of the American College of Surgeons; surgeon to the Kingston General Hospital; aged 63; died, October 31.

Eustace Monett Singleton ⊕ Marshalltown, Iowa; Northwestern University Medical School, Chicago, 1891; member of the American Academy of Ophthalmology and Oto-Laryngology; physician and owner of a hospital bearing his name; aged 69; died, November 29, in the University Hospital, Iowa City.

Walter D. Cross ⊕ Corsicana, Texas; Memphis (Tenn.) Hospital Medical College, 1891; served during the World War; past president and secretary of the Navarro County Medical Society; formerly on the staff of the Corsicana Hospital and Clinic; aged 66; died, November 8, of coronary occlusion and arteriosclerosis.

James Brew, Nashville, Tenn.; University of Nashville Medical Department, 1899; member of the Tennessee State Medical Association; served during the World War; formerly on the staffs of the Protestant and St. Thomas hospitals; aged 61; died, November 25, of heart disease.

Charles Edward Sayre, Norfolk, Neb.; Hering Medical College, Chicago, 1894; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1897; member of the Nebraska State Medical Association; aged 71; died, November 18, of pneumonia.

Frank Wise Goodell, Effingham, Ill.; Butler University Medical Department, Indianapolis, 1880; past president of the Effingham County Medical Society; formerly county coroner; at one time on the staff of St. Anthony's Hospital; aged 74; died, November 21.

Burton French Weston ⊕ Mason City, Iowa; Rush Medical College, Chicago, 1891; past president of the Cerro Gordo County Medical Society; on the staff of St. Joseph's Mercy Hospital; aged 64; died, November 18, in a local hospital, of acute endocarditis.

Adam Elmer Diller ⊕ Aurora, Ill.; Northwestern University Medical School, Chicago, 1907; fellow of the American College of Surgeons; on the staff of St. Joseph Mercy Hospital; aged 54; died, November 30, in the Copley Hospital, of arteriosclerosis.

Charles A. Wall, Buffalo; University of Buffalo School of Medicine, 1879; member of the Medical Society of the State of New York; past president of the Erie County Medical Society; aged 80; died, November 4, in the City Hospital, of myocarditis.

Walter Jones, New York; Hahnemann Medical College and Hospital of Philadelphia, 1893; New York Homeopathic Medical College and Hospital, 1896; aged 64; died, September 9, in the Morrisania City Hospital, of diabetes mellitus and bronchopneumonia.

Edwin S. Anderson, Dover, Del.; Homeopathic Medical College of Pennsylvania, Philadelphia, 1866; past president of the Board of Homeopathic Medical Examiners; aged 89; died, September 21, of arteriosclerosis and chronic interstitial nephritis.

Jacob Philip Schneider, Palmer, Mass.; University of Vermont College of Medicine, Burlington, 1894; member of the Massachusetts Medical Society; for many years chairman of the board of health of Palmer; aged 66; died, November 12.

William Dewey Wightman ⊕ Los Angeles; Northwestern University Medical School, Chicago, 1926; member of the Associated Anesthetists of the United States and Canada; aged 35; died, December 6, of a self inflicted bullet wound.

George Leon West ⊕ Newton, Mass.; Harvard University Medical School, Boston, 1894; member of the board of health of Newton; aged 65; on the staff of the Newton Hospital, where he died, November 18, of heart disease.

Frank P. McKinstry, Washington, N. J.; Hahnemann Medical College of Philadelphia, 1878; member of the Medical Society of New Jersey; past president of the Warren County Medical Society; aged 78; died, November 23.

Louis Audenried Salade, Central Point, Ore.; University of Pennsylvania School of Medicine, Philadelphia, 1888; aged 69; died, November 14, in the Medford (Ore.) Hospital, of ruptured appendix and intestinal obstruction.

Howard C. Silver, Baltimore; University of Maryland School of Medicine, Baltimore, 1888; aged 73; died, October 22, at the Church Home and Infirmary, of arteriosclerosis, coronary thrombosis and angina pectoris.

William Abner Wakeley ⊕ Orange, N. J.; New York Homeopathic Medical College and Hospital, 1888; formerly on the staff of the Orange Memorial Hospital; aged 70; died, November 17, of cerebral hemorrhage.

William David Senn, Newberry, S. C.; Medical College of the State of South Carolina, Charleston, 1886; member of the South Carolina Medical Association; aged 74; died suddenly, November 23, of heart disease.

George Clinton F. Williams, Hartford, Conn.; University of the City of New York Medical Department, 1878; since 1920 president of the state board of public welfare; aged 76; died, November 15, of myocarditis.

Roger Williams, Los Angeles; Jefferson Medical College of Philadelphia, 1877; member of the Medical Society of the State of Pennsylvania; aged 83; died, November 20, at Upland, Calif., of cardiorenal disease.

Hermann W. Strosser, New Britain, Conn. (licensed, Connecticut, 1893); member of the Connecticut State Medical Society; on the staff of the New Britain General Hospital; aged 72; died, November 5.

John C. Twitty, Rutherfordton, N. C.; Baltimore Medical College, 1892; member of the Medical Society of the State of North Carolina; for many years county health officer; aged 64; died, November 6.

Andrew H. Cowie, Flint, Mich.; Saginaw (Mich.) Valley Medical College, 1899; member of the Michigan State Medical Society; aged 65; on the staff of the Hurley Hospital, where he died, November 24.

Oscar Herman Hahn ⊕ Hastings, Neb.; Ensworth Medical College, St. Joseph, Mo., 1908; on the staff of the Mary Lanning Memorial Hospital; aged 48; died, November 23, of cerebral hemorrhage.

William A. Adair, Moscow, Idaho; Fort Wayne (Ind.) College of Medicine, 1883; member of the Idaho State Medical Association; formerly city and county health officer; aged 75; died, September 24.

Thomas Edward Duffee ⊕ Pawtucket, R. I.; University of Vermont College of Medicine, Burlington, 1903; aged 61; died, November 10, in the South County Hospital, Wakefield, of pneumonia.

John Francis Corbin, Galesburg, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1898; aged 63; died, December 1, of bronchitis.

George William Dippel ⊕ Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1902; aged 54; died, November 1, in St. Francis Hospital, of acute myelogenous leukemia.

William J. Weindel, Marion, Va.; Kentucky School of Medicine, Louisville, 1897; member of the Medical Society of Virginia; aged 58; died, September 7, of carcinoma of the stomach.

Ole E. Robinson, Independence, Kan.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1901; member of the Kansas Medical Society; aged 56; died, November 13.

Morton William Fraser, Woodlake, Calif.; Hahnemann Medical College of the Pacific, San Francisco, 1914; member of the California Medical Association; aged 47; died, October 5.

Frank Carlton Williams, Syracuse, N. Y.; University of Michigan Medical School, Ann Arbor, 1883; aged 75; died, November 20, of cerebral hemorrhage and chronic myocarditis.

Albert Andrew Guffey, McKeesport, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1897; member of the school board; aged 65; died, October 1, of diabetes mellitus.

August Carl Bothe, San Francisco; College of Physicians and Surgeons of San Francisco, 1899; aged 67; died, October 23, of carcinoma of the sigmoid and diabetes mellitus.

Frederick Samuel Pope, Santa Ana, Calif.; Trinity Medical College, Toronto, Ont., Canada, 1898; member of the California Medical Association; aged 65; died, October 19.

Joseph Allen Wright, Covington, Ga.; University of Georgia Medical Department, Augusta, 1879; also a druggist; aged 80; died, August 20, in a hospital at Atlanta.

Oscar Victor Lawson, San Francisco; Illinois Medical College, Chicago, 1899; aged 62; died, July 13, in the Agnew State Hospital, Agnew, of chronic myocarditis.

Frederick Charles Gray, Bayonne, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1896; aged 63; died, November 22, of cerebral hemorrhage.

Sheftel Jacob Elner, Chicago; University of Illinois College of Medicine, Chicago, 1913; aged 63; died, November 24, of coronary occlusion and angina pectoris.

Reinhart L. Hild ⊕ St. Louis; Homeopathic Medical College of Missouri, St. Louis, 1909; aged 65; died, November 19, of myocarditis and coronary thrombosis.

Rosa Engelmann, Pasadena, Calif.; Woman's Medical College, Chicago, 1889; aged 73; died, September 2, at the Las Encinas Sanitarium, of carcinomatosis.

Albon Ellsworth Bartoo, Pomona, Fla.; University of Buffalo (N. Y.) School of Medicine, 1889; aged 71; died, November 30, of heart disease.

Louis Fowler Joy, Fulton, N. Y.; Long Island College Hospital, Brooklyn, 1897; aged 62; died, September 9, in Syracuse, of angina pectoris.

Ormond Pinkerton Paulding, Santa Maria, Calif.; University of Michigan Medical School, Ann Arbor, 1875; aged 88; died, October 21.

Theodore E. Bryant, Houston, Texas; Meharry Medical College, Nashville, Tenn., 1900; aged 58; died, August 25, of cerebral hemorrhage.

Joseph Newell Sipher ⊕ Medina, Ohio; University of Wooster Medical Department, 1885; aged 71; died, October 15, of heart disease.

Edward Preval Rice, Augusta, Ga.; University of Georgia Medical Department, Augusta, 1901; aged 52; died, October 18, of heart disease.

Mactier Warfield, Baltimore; University of Maryland School of Medicine, Baltimore, 1884; aged 75; died, November 2, of carcinoma.

James K. Barlow, Savannah, Tenn.; University of Louisville (Ky.) School of Medicine, 1875; also a dentist; aged 82; died, November 11.

Bloom Warren Ganoung, St. Louis; University of Buffalo School of Medicine, 1885; aged 74; died suddenly, November 9, of heart disease.

William C. Bilbro, Nashville, Tenn.; University of Maryland School of Medicine, Baltimore, 1884; aged 70; died, November 28.

Elizabeth W. Griscom, Berkeley, Calif.; Woman's Medical College of Pennsylvania, Philadelphia, 1887; aged 85; died, September 26.

Elbert W. Ross, Sugar Grove, Va. (licensed, Virginia, by exemption, under the Act of 1895); aged 67; died, November 5, of pneumonia.

James Austin Payzant, Vancouver, B. C., Canada; College of Physicians and Surgeons, Baltimore, 1884; aged 76; died recently.

Herbert Lucius Stebbins, Los Angeles; University of Vermont College of Medicine, Burlington, 1884; aged 74; died, September 4.

James Wesley Shrout, Shirley, Ind.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1897; aged 59; died, November 9.

Fred Sargeant Crocker, Chicago; Rush Medical College, Chicago, 1897; aged 63; died, November 30, of cerebral hemorrhage.

Elmer Thomas White, Chicago; Homeopathic Hospital College, Cleveland, 1883; aged 71; died, December 2, of chronic myocarditis.

Oscar Vincent Everett, Long Beach, N. Y.; University of the City of New York Medical Department, 1892; died, September 11.

Ada M. Lamson, Lima Center, Wis.; Chicago Homeopathic Medical College, 1881; aged 75; died, August 7, of carcinoma.

Levi Dungan Hurd, Jackson, Ohio; Starling Medical College, Columbus, 1903; aged 57; died, October 29, of a tumor of the neck.

Charles Baird Oliver, Chatham, Ont., Canada; Trinity Medical College, Toronto, 1890; aged 67; died, November 19.

Wilson I. Gautier, Athens, W. Va.; Maryland Medical College, Baltimore, 1904; aged 72; died, August 10, of nephritis.

David H. Keller ⊕ Bangor, Pa.; Columbus (Ohio) Medical College, 1882; aged 72; died, November 22, of heart disease.

Frank Taliaferro, San Diego, Calif.; Jefferson Medical College of Philadelphia, 1875; aged 84; died, October 22.

Robert James Prather, Dallas, Texas (licensed, Mississippi, 1897); died, in November, of cerebral hemorrhage.

Earnest E. Murray, Escondido, Calif.; American Medical College, St. Louis, 1887; aged 70; died, October 26.

John Gilbert Grim, La Habra, Calif.; Medical College of Ohio, Cincinnati, 1881; aged 74; died, October 6.

J. F. Hendricks, Merkel, Texas; Atlanta Medical College, 1883; aged 79; died, October 27, of senility.

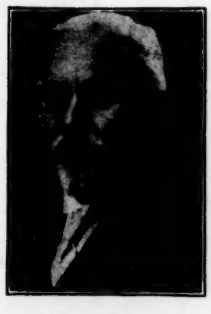
Correspondence

THE DEATHS OF CALMETTE AND ROUX

To the Editor:—Within but a few days' interval the illustrious Institut Pasteur at Paris has lost its two most distinguished leaders. On October 29, Prof. Albert Calmette died at the age of 70 years and on November 3, Dr. Emile Roux, director of the institute, died at the age of 79 years. This double loss to medical science can be fully grasped only by those interested in the progress of science. By their personal charm and creative genius they seemed surrounded by a preciousness wholly different from that of other mortals.

Professor Calmette's keen intelligence was clearly portrayed in his distinguished looking face. But rarely is one fortunate to encounter such mild and radiant eyes. Pure goodness shone through them and betrayed the presence of an even and placid conscience. Always modest and quiet in his manners, he seemed to exist solely for the interests of science and the welfare of humanity. At all times tactful and exceedingly polite, he presented the type of Frenchman foreigners but rarely encounter and the impression of whom is destined to linger in their mind as something worthy of reverence and praise. His immense service in the interest of science was so ideally matched with an almost excessive modesty that the memory of him will always remain a source of inspiration to those who were privileged to know the man intimately as scientist, humanist, master and friend.

Professor Calmette was director of the Institut Pasteur at Lille during the entire German occupation of that city between 1914 and 1918. His arrest was repeatedly proposed, but the enemy openly admitted that his charming deportment exonerated him completely of any guilt and they allowed him to pursue his medical investigations undisturbed on the one condition that he did not quit the city. By the command of General von Gravenitz, Mme. Calmette was carried away as a hostage to a distant prison camp at Hanover. During this cruel ordeal, Calmette was not allowed any news, either from his imprisoned wife or from his officer son, who fought at the front with the French artillery. During the recent tragedy at Lübeck, in which more than seventy children died following vaccination with a contaminated B C G vaccine, said to have come from Calmette's laboratory and subsequently adjudged by the superior court at Leipzig to have been ill prepared by the German bacteriologists at Lübeck, Calmette commented with remarkable evenness of mind on the cruel assaults made against his character by certain German scientists: "Nobody can fully comprehend the moral torture inflicted on me by this unfortunate tragedy, but I desire to exonerate German science—so preeminent in every sphere—of any blame which needs must fall on the shoulders of certain individuals." At no time during this tragic display of bitter feelings across the Rhine was any bitterness detected in this great and placid scientist, although his friends were fully aware of the fact that behind Calmette's serene outward appearance there resided an exquisite sensibility—indeed, a fitting attitude to assume by the man who had been privileged to give the world the antivenin serum which already has saved thousands of lives and who now in later years had succeeded in the development of a method which rearoused world interest in the eradication of tuberculosis.



Albert Calmette.

Dr. Roux presented an essentially different type of personality. Should one come across Dr. Roux during his walks through the gardens or the corridors of the Institut Pasteur and without knowing the man, instinctively one would ask himself, "Who is this queer old man?" Here he wandered to and fro as a daily routine, old and gray and poorly clad, stoop shouldered and withal a pathetic, sallow-jaundiced complexion. Perforce he conveyed the impression that being alive was to him a source of grief. But behind this pitiable outward frame hid a highly critical and richly endowed scientific personality, which for the past nineteen years has reverently and sagaciously directed the destiny of the world's most illustrious and important center for medical research.

Dr. Roux was popularly best known for his discovery of the diphtheria toxin and the subsequent preparation of the diphtheria antitoxin. But in spite of an immediate and universal recognition as one of the world's foremost savants, he remained excessively modest. For years he occupied small quarters in the garden of the Institut Pasteur, which served him as office and living room. One was surprised to find in his living room an unpainted wooden table, a few simple chairs and an iron bed of the conventional hospital design. Aside from another small table, loaded down with books and papers, his living quarters were frugally bare. He spent the early part of every morning with the institute superintendent and the remainder of the day with studies and medical research. This routine was assiduously followed year after year without interruption for any vacation. Now and then his closest friends would succeed in luring him to the country, but here he soon became fidgety and longed to return to the institute. He nearly attained the age of 80. Had he but spared his efforts he would easily have reached the nineties, for he was endowed with a strong body in spite of its outward frail appearance. He rarely visited the homes of friends and colleagues and religiously refused to accept invitations to mingle with high society. On rare occasions he attended the sessions of the Académie de médecine. He refused to accept the salary to which he was entitled as director of the institute: "I really don't need the money," he said, "and they give me board, room, light and heat, and whenever I become hungry the maid brings me food. The Institut Pasteur needs the money worse than I do." When he was called out to attend to professional duties in rain or in inclement weather, he was always seen to turn up the collar of the overcoat in hastening to catch the nearest autobus or street car. He would not make use of an automobile: "An auto costs too much and we need the money for scientific work." His extreme modesty and frugality knew no limits. Science and hard work were to him the two most important things in life.

Pierre Paul Emile Roux.

The enormous investigations which Dr. Roux was able to accomplish in the interest of medical science are so extensive that only the expert is aware of their importance. Only a few days before his death, he was told of the passing away of his old friend and colleague Calmette. He became deeply moved by this sad news and repeatedly asked whether the laboratories of Calmette were adequately taken care of. While he himself was struggling with death, his thoughts centered about the enormous loss to the institute by the untimely death of Calmette, whom he had wished to become his successor as director. When he was apprised of the earnestness of Calmette's associates to carry on the work in the spirit of their departed master, his peace of mind was restored.

These two eminent savants have shed a luster over French science as few others have been privileged to do since the heroic years of Louis Pasteur. They have served their country and the world faithfully and unselfishly. Modestly and devotedly they have labored for the good of humanity in times when so many forces were at play to destroy our noble heritage of civilization, by every possible means of disillusionment and political strife.

KONRAD E. BIRKHAUG,
Institut Pasteur,
Paris.

USE OF SALINE IN SOLUTIONS FOR LOCAL ANESTHESIA

To the Editor:—In a recent review of my book on local anesthesia (THE JOURNAL, October 28, p. 1418) I am criticized for not advocating the use of physiologic solution of sodium chloride in making up the anesthetic solution. Why should one use it in making up anesthetic solution? I have tried about all the various mixtures advised for the making up of anesthetic solutions in the clinic, in my leg, and in bunnies and bow-wows. There is no difference in the "feel" injected in one's own skin, and slides of animal tissue show no injury when plain tap water is used. Clinical experience convinces me that anesthesia is more prompt when a hypotonic medicine is used. Wise boys tell me that theoretically a hypotonic solution is more quickly absorbed than an isotonic or a hypertonic one. Be it remembered that after one dissolves a few tablets of procaine in an isotonic solution it becomes hypertonic. Put into a rabbit's abdominal cavity, a procaine solution in water is absorbed more rapidly than is one made up with physiologic solution of sodium chloride. What one wants in local anesthesia is for the tissues to drink up the solution as rapidly as possible. Besides, a saline solution cannot be made in the operating room. If my hospital was located in the middle of the Pacific Ocean I would catch rain water for the making of my procaine solutions. Why should one use physiologic solution of sodium chloride for making up our anesthetic solution? I really want to know.

ARTHUR E. HERTZLER, M.D., Halstead, Kan.

[NOTE.—The letter was referred to the reviewer of Dr. Hertzler's book, who writes:]

To the Editor:—There can be little doubt that tap water is not the optimal or even desirable solvent for anesthetic drugs. Braun showed as early as 1898 that, when salt solutions of various concentrations are injected intradermally, pain followed by anesthesia results. With sodium chloride solutions between 0.6 and 2.5 per cent, an indifferent zone exists in which neither irritation nor anesthesia of the dermal wheal is detectable. Later, with the help of freezing point determinations, the optimal, isotonic concentration of 0.9 per cent sodium chloride was advised. It has been erroneously thought that, by adding the procaine salt to this solution, a hypertonic concentration results. Procaine hydrochloride is freely dissociated in the salt solution, and when it mixes with buffer solutions of the tissues it completely dissociates into the procaine base and is lipoid soluble (Gros, 1910). Thus osmotic pressure of the procaine salt is negligible and the salt can be dissolved in physiologic solution of sodium chloride without becoming hypertonic.

Procaine hydrochloride dissolved in tap water may produce anesthesia slightly more rapidly because, in the first place, tap water and distilled water as used by Potain (1869) and Dieulafoy (1870) has well known anesthetic properties which follow an initial burning. This initial burning is naturally abolished by the presence of procaine. Another reason for a more rapid aesthesia with tap water is its increased alkalinity (Chicago tapwater has a p_H of about 6.8) compared with a procaine solution dissolved in physiologic solution of sodium chloride, which has a p_H of around 4.85 to 5. That alkaline solutions act more rapidly because of the increased hydrolytic dissociation of the procaine base has been universally accepted as a fact.

For these reasons it is quite understandable that the procaine-tap water solution may act faster, although how much faster it acts has not been stated, and from my personal experience the difference, at least in infiltration anesthesia, cannot be great. When "wise boys" have informed Dr. Hertzler that the hypotonic solutions are more rapidly absorbed, they have lost sight of the fact that the anesthetic action of procaine on nerve endings, nerve fibers and cell membranes will depend on its absorption as a base to the lipoid film with which they are covered.

From clinical experience it can be stated that procaine-tap water or procaine-distilled water solutions produce persistent edema, induration or, under unfavorable circumstances, even necrosis. Poorly vascularized subcutaneous fat, when injected (and not overinfiltrated) with procaine-tap water, may disrupt the fat cell and leak through the incision for weeks. It is unnecessary to say that not only the fat cell ruptures in the presence of such a hypotonic solution but also the red cell hemolyzes, and that in thin-skinned individuals a permanent brownish induration will testify to this effect. Dr. Hertzler states that slides of animal tissue show no injury when tap water is used. If that is so, the tissue injected must have been muscle and not subcutaneous fat. And when peripheral nerves are brought in contact with strongly hypotonic solutions, they may suffer irreversible damage. French surgeons, in the second half of the nineteenth century, injected distilled water freely into sciatic nerves, resulting in relief from pain and an occasional foot drop. In performing a nerve block, the use of isotonic solutions is even more important than in infiltration anesthesia.

If Dr. Hertzler's clinic was located in the middle of the Pacific Ocean, he could still get a little salt from his cook, unless he believed in a salt-free diet.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THE COMPLEMENT FIXATION TEST FOR AMEBIC DYSENTERY

To the Editor:—We have been requested by the United States Public Health Service to examine all our dining car and restaurant employees to pick up if possible cases of dysentery that might have arisen at Chicago. We are actively cooperating in this work and I have learned very indirectly that there is a Craig test for dysentery but do not know anything definite about it. If you can give me references or lend me reprints I shall be much indebted.

J. M. WAINWRIGHT, M.D., Scranton, Pa.

ANSWER.—Col. Charles F. Craig, U. S. Army, retired, and now director of the Department of Tropical Medicine of Tulane University School of Medicine, New Orleans, has done an enormous amount of clinical and research work on amebic dysentery, one phase of which has been the development of a complement fixation test for the diagnosis of amebiasis which, he believes, has practical value as a diagnostic method. The technic of this test is practically the same as that of the standard method of performing the complement fixation test for syphilis used in the U. S. Army laboratories. The chief difference in the technic of the two tests is in the preparation and titration of the antigen used. Craig uses an alcoholic extract of cultures of Endamoeba histolytica grown on a modified Boeck-Drbohlav medium. He takes a rich culture of this organism grown on the medium and develops subcultures until there are available at least 120 cultures of the organism for extraction with absolute alcohol. It is necessary to use great care in titrating this antigenic extract for hemolytic qualities, anticomplementary

qualities and antigenic strength. The technic of the test is important and should be attempted only by a trained serologist. The use of the undiluted alcoholic extract of Endamoeba histolytica as the antigen makes the test very delicate and subject to extreme error unless the exact technic is followed. The practical value of the test, therefore, is limited particularly by the difficulty of preparing and titrating the antigenic extract. Craig described his technic in the September, 1929, issue of the *American Journal of Tropical Medicine*. He reported in this article some of the results he obtained with the test. In the June, 1933, *Journal of Laboratory and Clinical Medicine* he described further observations on the test and reported results obtained in testing 1,000 persons. The test, he says, has proved of value in the diagnosis of cases of amebic abscess of the liver unaccompanied by intestinal symptoms; also in the diagnosis of apparently healthy "carriers" of Endamoeba histolytica, and of those presenting mild symptoms of infection; also in the control of antiamebic treatment. The strongest positive results are usually obtained with the test in "carriers" who have no symptoms of amebiasis or in persons who have mild symptoms of the infection. In some severe cases of acute amebiasis, he found the reaction doubtful or negative, although in most severe cases the reaction was positive. Persons infested with other species of ameba or with the intestinal flagellates do not give positive complement fixation with this test unless Endamoeba histolytica also is present. Normal persons or those ill with other diseases do not give a positive complement fixation reaction unless they also harbor Endamoeba histolytica. The specific complement fixing bodies disappear from the patient's blood serum following antiamebic treatment and the disappearance of Endamoeba histolytica from the feces. In relapsing cases of amebiasis, the test which has been negative during the interval of apparent freedom from ameba again becomes positive, sometimes even before the parasite is again demonstrable in the feces. Unless repeatedly negative for several weeks, therefore, a negative reaction does not prove the absence of amebic infection or that antiamebic treatment has resulted in a cure.

In his article in THE JOURNAL, July 5, 1930, on the diagnostic value of the complement fixation test in amebic infections, Craig noted that Izar in 1914 used an aqueous antigen prepared by extracting fecal matter containing Endamoeba histolytica and liver abscess pus. Others endeavored to confirm Izar's report and were not able to obtain consistent results, owing to the weakness of the antigenic extract. Craig believes that by his method an antigen can be prepared which is strong enough to react in the majority of patients infected with Endamoeba histolytica.

AMEBIC DYSENTERY IN A CHILD

To the Editor:—Would you kindly outline specific treatment for an 8 year old girl with clinical amebic dysentery of four months' standing? Please omit name.

M.D., Illinois.

ANSWER.—In the first place it is necessary to be certain that the child has the pathogenic ameba Endamoeba histolytica. Secondly, the extent of tissue damage present, particularly of the heart, liver, kidneys and lower bowel, determines the drug of choice in amebiasis. The child's weight is not given. Assuming that she is suffering from acute dysentery, the patient should be given bismuth subcarbonate (the subnitrate should not be used; see Roe, H. E.: Methemoglobinemia Following the Administration of Bismuth Subnitrate, THE JOURNAL, July 29, 1933, p. 352) in one-fourth to one-half teaspoonful amounts every time she has a diarrheal or bloody movement. If the liver and kidney function is not impaired she may be given carbarsone (Reed, A. C.; Anderson, H. H.; David, N. A., and Leake, C. D.: Carbarsone in the Treatment of Amebiasis, THE JOURNAL, Jan. 16, 1932, p. 189) in divided amounts orally not exceeding a total of 300 mg. per kilogram over a month's period. The drug may be used also as a retention enema in double this total dosage, provided rest periods of a week to ten days are allowed between courses to allow for arsenic excretion. Vioform-N. N. R. (David, N. A.; Johnstone, H. G.; Reed, A. C., and Leake, C. D.: The Treatment of Amebiasis with Iodochlorhydroxyquinoline, THE JOURNAL, May 27, 1933, p. 1658) may be given in the same amount orally but is not recommended for rectal use because it causes local irritation. Carbarsone has an additional advantage because of its definite "tonic" action (Correspondence, THE JOURNAL, Dec. 2, 1933, p. 1819). Emetine hydrochloride may be used subcutaneously in a total amount not exceeding 10 mg. per kilogram if there is an amebic hepatitis or hepatic abscess, and provided the heart is watched for evidence of possible injury. The diet should be smooth, rich in protein and low in starch content. Members of the child's household should be examined in order to make certain that reinfection does not occur.

AMEBIC DYSENTERY IN PREGNANCY

To the Editor:—I have a patient who is pregnant and has amebic dysentery. Kindly send me an article or articles pertaining to this subject, the treatment being the question in mind, without interfering with the pregnancy.

REO M. SWAN, M.D., Cambridge, Ohio.

ANSWER.—The patient should be confined to bed and given 0.065 Gm. (1 grain) of emetine hydrochloride each day hypodermically and this dose repeated for five or six days. Chiniofon should then be given in a dose of 0.75 Gm. (12 grains) three times a day for a period of eight days. If this dosage of chiniofon causes severe diarrhea after the first two days on which it is taken, the dosage should be reduced to 0.5 Gm. (8 grains) three times a day. During the treatment the diet should be liquid or semiliquid.

DILAUDID

To the Editor:—What is the latest on dihydromorphinone hydrochloride, five times the potency of morphine, non-habit forming, probably less nauseating, originated in the Knoll Laboratories in Germany? Please omit name.

M.D., Texas.

ANSWER.—Dilaudid is capable of producing the effects of morphine in possibly one-third the dose; but it is of questionable advantage, as it is evidently habit producing, several cases of dilaudidism having been observed.

FOSHAY SERUM FOR TULAREMIA

To the Editor:—I have a case of tularemia in a woman, aged 45. The blood test was positive in a dilution of 160 about the twelfth day of the disease. The manifestations are of the ulceroglandular type, with an ulcer on the right index finger and involvement of the regional glands along the biceps and in the axilla. The case is running a comparatively mild course and the temperature is now normal at the end of three weeks. The glands, however, are still swollen and quite tender although they have not yet broken down. The only definite treatment which I have been able to find in the literature is Foshay's serum and Fisher's article in the *Journal of the Indiana State Medical Association* recommending the use of neoarsphenamine. The statistics on these methods of treatment are very meager and I will greatly appreciate it if you will give me any further information you may have on any specific treatment. Is Foshay's serum available on the market; if so, where can I obtain it?

CLARKE ROGERS, M.D., Indianapolis.

ANSWER.—The antitularense serum developed by Foshay appears to exert a specific curative effect in cases of tularemia (see Foshay, Lee: An Antiserum for the Treatment of Tularemia, THE JOURNAL, Nov. 4, 1933, p. 1447). The serum is not available at the present time through trade sources but may be obtained directly from Dr. Lee Foshay, Cincinnati General Hospital, Cincinnati.

RECTAL GONORRHEA

To the Editor:—What is the best treatment for rectal gonorrhea in a woman? Please omit name.

M.D., West Virginia.

ANSWER.—Gonorrheal proctitis is treated daily with a cleansing tapwater enema, followed by an instillation of one pint of 1:4,000 potassium permanganate, as a retention enema. An occasional oil retention enema may be used. In addition, measures are necessary to eradicate the focus from the genital tract. The cervix, in the acute stage, is treated with applications of either 2 per cent mercurochrome or tincture of iodine and alcohol. Douches are prohibited.

In the chronic stage, cauterization of the cervix with the actual cautery is the procedure most commonly practiced. Not to be forgotten is the treatment of the urethra and Skene's glands by massage, and instillations of mercurochrome or silver salts. Condylomata acuminata are treated with the silver nitrate stick or the actual cautery.

PROTRACTED PASSIVE HYPEREMIA IN CARDIAC DECOMPENSATION

To the Editor:—From my limited clinical experience and library, I am unable to ascertain the exact pathologic changes that would take place in an organ when the veins draining the blood from it are constantly partly obstructed: in other words, when the organ is constantly engorged with venous blood. Information will be thankfully received.

RUSSEL GWINN, M.D., Missoula, Mont.

ANSWER.—The condition described is practically that occurring in protracted passive hyperemia in cardiac decompensation. The changes depend on the degree of obstruction and the structure of the organ, especially the blood supply. In the liver, which receives relatively little arterial blood, venous stasis leads to marked asphyxia, which results in death and absorption of the functional liver cells receiving the least oxygen; namely those in the center of the lobule. Thus, a

large proportion of the liver tissue may be lost, its place being taken by dilated blood channels and sometimes to a slight degree by fibrous tissue. On the other hand, an organ receiving much more arterial blood than is required for its mere nutritional needs, such as the kidney, exhibits but little structural change from ordinary degrees of venous engorgement, although its functional activity is decreased in proportion to the decreased blood flow through its secretory elements. In the lungs, because of their structure, diapedesis and repeated capillary hemorrhages lead to iron pigmentation and some fibrosis, whereas in the spleen a diffuse increase in fibrous and elastic elements are the chief effects.

OTOSCLEROSIS AND ALOPECIA

To the Editor:—Will you kindly outline an investigation in an effort to discover the cause of otosclerosis in a man, aged 23? What is the status of the treatment of otosclerosis with parathyroid gland in an effort to decalcify the bones of the middle ear? What is the status of the treatment of the various forms of alopecia with pituitary extract? Please omit name. M.D., Arizona.

ANSWER.—Up to the present, the actual cause of otosclerosis has not been determined. There have been many theories of the etiology of this condition, and one of these holds that it is due to a disturbance of the endocrine glands. Though nothing positive has been determined, it is well known that there is a definite tendency to hereditary transmission, that the condition usually develops in early life, and so on. The *Transactions of the American Otological Society* for the past few years have contained reports of the Committee on the Investigation of Otosclerosis. Funds are allocated to several investigators in this country and in Europe, so that the etiology and pathology of this disease are being attacked on many sides. However, no positive results have thus far been obtained. So far as known, the parathyroid gland has had no effect on the calcification of the bones of the middle ear. As a matter of fact, otosclerosis is really an otospongiosis, usually in the region of the foot plate of the stapes, and does not involve the other bones of the middle ear.

It has not been definitely demonstrated that pituitary extract has any beneficial effect on alopecia except in a few cases in which there was apparently some definite deficiency of the pituitary gland.

HERPES SIMPLEX

To the Editor:—A man, aged 33, well nourished and well developed, whose tonsils and adenoids have been removed and whose teeth have been roentgenographed without discovery of infection, for the past eight years has had herpes of the lips and dryness of the skin of the face, as well as herpes on the upper lip and close to the mouth, and herpes in the arch of the left foot. Genito-urinary and gastro-intestinal examinations are negative. The lungs and heart are normal. He had 125 skin allergy tests, which were all negative. The face herpes comes in cycles of from seven to ten days. In a chronic case of this type what else should I look for as a cause, and what internal treatment is usually indicated?

RUSSELL L. HODGE, North Kansas City, Mo.

ANSWER.—Herpes simplex is caused by one of the filtrable viruses, which apparently lies latent in most persons, becoming active when resistance is lowered from any one of many causes. Recurrent herpes simplex is supposedly due to the same cause, but explanation of its cyclic recurrence is difficult. Many methods of treatment have been used with success. Calcium lactate, from 2 to 5 Gm., dissolved in hot water, three times a day after meals, is often valuable. It may well be supplemented by injections, intravenous or intramuscular, of calcium gluconate from every three to five days.

Intramuscular injections of the patient's own blood, from 5 to 15 cc. every five days, is recommended.

Vaccination with cowpox vaccine, repeated, if necessary, has been helpful.

Ultraviolet ray exposures over the area in which the herpes recurs is recommended. Roentgen treatment, one-fourth erythema dose once a week, is highly commended. A course of insulin has been reported as successful, as has the use of cinchophen.

Herpes in the arch of the foot is possible, but ringworm in this area is much more probable. If, on examination of the tops of the vesicles after they have been soaked in 10 per cent potassium hydroxide for from two to seventy-two hours, a fungus is found, the lesions should be painted daily with tincture of iodine until they dry up, and then an ointment of 3 per cent salicylic acid and 6 per cent benzoic acid in ointment of rose water should be applied once a day for at least a month after the lesions have disappeared.

BILATERAL CRYPTORCHIDISM AND FACIAL TIC

To the Editor:—I have an 11 year old boy with bilateral cryptorchidism who for the past year or so has been developing a tic of the neck and face muscles. The testicles are felt in the inguinal canal and cannot be made to enter the scrotum. In view of the attending psychoneurosis, which is becoming more marked, should I insist on operative measures to transplant one or both testicles? Do you think the condition of the testicles is a factor in causing the nervous symptoms at this age? What operation would be advisable and from statistics what percentage of cures should one expect? Please omit name and address. M.D., New York.

ANSWER.—This patient evidently has two distinct conditions: first, a bilateral cryptorchidism, and, second, a tic of the neck and face muscles. In view of the fact that the boy is 11 years old and because both testicles can be felt in the inguinal canal, the advice that the patient should be operated on is justified. The two testicles should be transplanted into the scrotum at the same time. The operation, if correctly performed, is successful and the patient is cured in every instance.

The tic in the muscles of the neck and face has nothing to do with the cryptorchidism and therefore will not be influenced by the operation. This requires separate treatment by a neurologist.

RECURRENT SWELLING OF LIPS

To the Editor:—I have a patient, a man about 55 years of age, whose upper lip swells very much occasionally, several times a year. Yesterday the patient awoke with the upper lip greatly swollen and about noon it went down and the swelling shifted to the lower lip. This change was very rapid, occurring in about an hour. The patient had his upper lip swell when he was a small boy and says that he was treated for worms. Once in a while he suffers terrible itching in the anus and it swells internally and almost closes up. A purgative relieves this condition. Will you please give a diagnosis and treatment? Kindly omit name. M.D. South Carolina.

ANSWER.—From the history, this patient has recurring swellings of the lips similar to a group of cases described in THE JOURNAL by Drs. New and Kirch, April 22, page 1230. The condition is similar to what is known as angioneurotic edema, and permanent enlargement of the lips may result. The treatment suggested is the injection of boiling water in multiple areas about the lips, and the use of radium externally with distance and screening.

B. ACIDOPHILUS IMPLANTATION

To the Editor:—1. Is it possible for an anhydrous milk preparation to contain the living organisms of acidophilus bacilli? 2. What is the minimum number of acidophilus bacilli that must be ingested daily in order to have an acidophilus bacillus implantation take place in the colon? Kindly omit name. M.D., New York.

ANSWER.—1. An anhydrous milk might possibly contain some living acidophilus bacilli, but in the ordinary process of preparation and handling of dried milk their occurrence is not at all likely.

2. It is difficult to state the minimum number of living acidophilus bacilli that is necessary for implantation. Bacillus acidophilus milk should contain at least 100,000,000 viable organisms per cubic centimeter, and from a pint to a quart of such milk is required daily to effect results.

DISAPPEARANCE OF SPERM AFTER VASECTOMY

To the Editor:—A North Dakota physician asks how long it takes for spermatozoa to disappear from the semen after a bilateral vasectomy. Your answer is that one or two ejaculations should be sufficient. I have had occasion to do a number of these operations and in order to satisfy myself about the question involved I had condom specimens brought to the office for microscopic examination until the semen was undoubtedly clear of spermatozoa. I found that the first specimen obtained after operation contained as many as usual; the second contained about half the number found before operation; the third contained several, the fourth a few, and the fifth an occasional organism or none. I never found any after that but I advise patients not to depend on the certainty of disappearance until a few more ejaculations have occurred. One who examines the interior of the seminal vesicles, or even a picture of a longitudinal section, will realize that there is some uncertainty as to just when the last tiny spermatozoon may be eliminated, or when those already ascending the vas above the point of section may have reached the vesicle and then have been discharged.

W. G. PARKER, M.D., Mount Vernon, Ill.

HEREDITY IN HYDROCEPHALUS

To the Editor:—In view of the recent communication from Dr. Madge T. Macklin (THE JOURNAL, Nov. 18, 1933, p. 1663) concerning the occurrence of several hydrocephalic children in the same family, I thought that you might be interested in the hereditary hydrocephalus of the mouse now being bred and studied at Harvard. In these mice it behaves as a mendelian recessive, which is probably the mode of transmission in some human cases. CLYDE E. KEELER, Boston.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 9-13. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Written (Group B Candidates).* The examinations will be held in various cities of the United States and Canada, April 7. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OPHTHALMOLOGY: Cleveland, June 11. Sec., Dr. William H. Wilder, 122 S. Michigan Blvd., Chicago.

AMERICAN BOARD OF OTOLARYNGOLOGY: Cleveland, June 11. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

ARIZONA: Phoenix, Jan. 2-3. Sec., Dr. J. H. Patterson, 320 Security Bldg., Phoenix.

COLORADO: Denver, Jan. 2. Sec., Dr. Wm. Whitridge Williams, 422 State Office Bldg., Denver.

CONNECTICUT: *Basic Science.* New Haven, Feb. 10. *Prerequisite to license examination.* Address, State Board of Healing Arts, 1895 Yale Station, New Haven.

DISTRICT OF COLUMBIA: Washington, Jan. 8-9. Sec., Dr. W. C. Fowler, 203 District Bldg., Washington.

HAWAII: Honolulu, Jan. 8-11. Sec., Dr. James A. Morgan, 48 Young Bldg., Honolulu.

ILLINOIS: Chicago, Jan. 23-25. Supt. of Regis., Dept. of Regis. and Edu., Mr. Eugene R. Schwartz, Springfield.

MINNESOTA: *Basic Science.* Minneapolis, Jan. 2-3. Sec., Dr. J. Charnley McKinley, 126 Millard Hall, University of Minnesota, Minneapolis. *Regular.* Minneapolis, Jan. 16-18. Sec., Dr. E. J. Engberg, 350 St. Peter St., St. Paul.

NATIONAL BOARD OF MEDICAL EXAMINERS: The examinations will be held at centers in the United States where there are five or more candidates, Feb. 14-16, May 7-9, June 25-27, and Sept. 12-14. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEBRASKA: *Basic Science.* Lincoln, Jan. 9-10. Dir., Bureau of Examining Boards, Mrs. Clark Perkins, State House, Lincoln.

NEW YORK: Albany, Buffalo, New York and Syracuse, Jan. 29-Feb. 1. Chief, Professional Examinations Bureau, Mr. Herbert J. Hamilton, Room 315 Education Bldg., Albany.

NORTH DAKOTA: Grand Forks, Jan. 2. Sec., Dr. G. M. Williamson, 4½ S. 3rd St., Grand Forks.

OREGON: Jan. 2-4. Sec., Dr. Joseph F. Wood, 509 Selling Bldg., Portland.

PENNSYLVANIA: Philadelphia, Jan. 2-6. Sec., Mr. W. M. Denison, 400 Education Bldg., Harrisburg.

RHODE ISLAND: Providence, Jan. 4-5. Dir., Dr. Lester A. Round, 319 State Office Bldg., Providence.

SOUTH DAKOTA: Pierre, Jan. 16-17. Dir., Dr. Park B. Jenkins, Pierre.

VERMONT: Burlington, Feb. 7-9. Sec., Dr. W. Scott Nay, Underhill.

WASHINGTON: *Basic Science.* Seattle, Jan. 11-12. *Regular.* Seattle, Jan. 15-16. Dir., Mr. Harry C. Huse, Olympia.

WISCONSIN: Madison, Jan. 9-11. Sec., Dr. Robert E. Flynn, 401 Main St., LaCrosse.

WYOMING: Cheyenne, Feb. 5. Sec., Dr. W. H. Hassed, Capitol Bldg., Cheyenne.

Utah June Report

Mr. S. W. Golding, director, Department of Registration, reports the written examination held in Salt Lake City, June 28-30, 1933. Nine candidates were examined, all of whom passed. Five physicians were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Number Passed
University of Colorado School of Medicine		(1933)	1
Northwestern University Medical School		(1932), (1933)	2
Rush Medical College		(1933, 2)*	2
School of Medicine of the Division of the Biological Sciences		(1933)†	1
Washington University School of Medicine		(1933, 3)†	3

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Medical Evangelists		(1914), (1931)	California
Bennett College of Eclectic Medicine and Surgery, Chicago		(1906)	Illinois
Northwestern University Medical School		(1932)	California
University of Pennsylvania School of Medicine		(1930)	Penna.

* These applicants have received a four-year certificate and will receive an M.D. degree and Utah license on completion of internship.

† License withheld pending completion of internship.

Wyoming Reciprocity Report

Dr. W. H. Hassed, secretary, Wyoming State Board of Medical Examiners, reports 6 physicians licensed by reciprocity from Oct. 2 to Nov. 7, 1933. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Colorado School of Medicine		(1931)	Colorado
Northwestern University Medical School		(1933)	Washington
Creighton University School of Medicine		(1928)	Nebraska
University of Nebraska College of Medicine		(1931), (1932, 2)	Nebraska

Book Notices

Colds and Hay Fever. By Frank Coke, F.R.C.S. Cloth. Price, $2. Pp. 148. Baltimore: William Wood & Company, 1933.

This is a conversational series of lectures on sneezing. It consists of six chapters covering the structure and function of the nose, the common cold, hay fever, other types of allergic sneezing, paroxysmal sneezing and chronic nasal catarrh. Despite a wealth of valuable references the author pretends to be casual in the sense that he disdains to indulge in minute details, he employs literary by preference to scientific terms, he theorizes when it suits the purpose of clarity, and he speculates and defends his speculations. Whole volumes on hay fever have been compressed into a brief chapter. He speaks of "spluttering coughs," he says that "the common cold is not . . . to be sneezed at" and he contributes as his last line "der is bore id sneezing dan was ever dreabed ob by der doze." The chapter on paroxysmal sneezing, the term he applies to the profuse sneezing and rhinorrhea of arising, is the screen on which he projects the McDonagh scheme of colloidal phases, brownian movement and molecular bombardment. In the very preface he defends speculation on the ground that theorizing may explain many unanswered questions. All this indicates that we are face to face with a self consciously seasoned observer at peace with his subject.

The little volume is packed full of interesting data from statistics to prescriptions. An Englishman would say that he betrays an awfully decent philosophy. For instance, he mentions the summation of stimuli in hay fever, a phrase which epitomizes the necessity for complete testing in hay fever so that positive factors besides pollen may be eliminated during the hay fever season. He sees a significance in the similarity between the common cold and hay fever, because chilling of the body in the former and injection of pollen into the leg in the latter both produce symptoms referable to the respiratory tract. He even mentions the asthma aftermath of hay fever due to the continued irritation by factors such as feathers, physiologically inadequate by themselves to produce symptoms in the given case. Aside from his explanation of early morning rhinitis, which Duke explains on a heat basis, he touches on other types of physical allergy as sunlight and follows up by advocating physical therapy in the form of exercises, baths and, indeed, friction with a towel. This clinician is aware of the marked lowering of the temperature of the nasal mucosa when the skin is slightly chilled, a fact to which a group of serious scientists have only recently deigned to bestow their attention. The catholicity of his treatment methods, including specific pollen extract, nonspecific therapy, exercise, diet, local application, cautery and electrotherapy, undoubtedly have won him a satisfied following. The one track inoculating allergist will be amazed that there is so much more than a needle and syringe.

Coke has written a tiny tract on sternutation. It is a free hand blue print of the field done with nonchalant facility. It will illuminate the subject if one will read the blue print with joyous effort matching the honest exuberance of its author.

Surgical Nursing Arranged According to the Unit Method. By Sister Mary Florence, R.S.N., B.S., R.N., Instructor in Surgical Nursing, Mercy School of Nursing, Mercy Hospital, Baltimore, Maryland. Paper. Price, $1.75. Pp. 119. Philadelphia & London: W. B. Saunders Company, 1933.

This book is arranged according to the Morrison unit method of teaching. It has five steps, which include exploration of the student's background in the subject, presentation or an overview of the unit, assimilation or collection of information, organization with review, and recitation to give evidence of necessary knowledge on the subject. In order to cover the great variety of subjects in the limited time, the book is divided into a number of general units containing illustrative specific surgical conditions. There are eight units, which include preoperative and postoperative management, major abdominal operations, glandular surgery, including the breast, thyroid and lymph glands, brain and nerve surgery, orthopedic surgery, and various types of anesthesia with their management. A few brief points are made as to the objectives and then a general discussion of the subjects in each unit is given, based

on recent textbooks. The nurse's point of view, given by the author, is especially pertinent and practical. A series of questions is then given regarding surgical subjects, hospital arrangements for the patient, and nursing problems, some going into scientific detail. References are included for the student who receives instruction in the wards as well as in the class room. The book does not include any information in reference to obstetric or purely medical conditions. Although the scope is limited to surgical nursing, the arrangement is well planned and is particularly suitable in conjunction with ward instruction.

Urologie infantile. Par les Drs Beer et Hyman. Monographies de pédiatrie et de puériculture. Préface du Dr. Ed. Papin, chirurgien de l'Hôpital Saint-Joseph. Traduit de l'Américain par le Dr Fritz Busser. Paper. Price, 40 francs. Pp. 262, with 50 illustrations. Paris: Gauthier-Villars, 1933.

This volume is beautifully made up. There are numerous illustrations, chiefly reproductions of roentgenograms, which are excellently chosen. The print, paper and illustrations leave nothing to be desired. It is the first book published in the French language devoted entirely to urology in infants and children and is a translation by Dr. Busser of the American edition of 1930. The sequence of the arrangement of the subject matter is orderly and rational and is divided into fourteen chapters, each having appended a brief but valuable bibliography, chiefly from American and German sources. The first and second chapters take up general symptomatology and methods of examination. A chapter is devoted to a discussion of enuresis. An excellent chapter of forty-six pages is devoted to congenital malformations, and one of twenty pages to chronic renal tuberculosis. The final chapter is devoted to malignant tumors of the kidney. This volume will supply an unfilled niche in the libraries of surgeons and students abroad.

A prova da fenolsulfoneftaleina e as relações ureicas (coefficientes ureo-secretórios) na clínica geral. Por Machado Macedo, assistante livre da 2.ª clínica cirúrgica. Dissertação ao agregado do 7.° grupo da Faculdade de medicina de Lisboa—1932. Paper. Pp. 174. Lisbon: Livraria Ferin, 1932-1933.

This book is devoted to the analysis of the accumulated experience of eighteen years in the second surgical clinic of the University of Lisbon (service of Professor Cabeça) in determining the functional capacity of the kidney in health and disease by means of phenolsulphonphthalein and by the various coefficients of urea secretion. The study embraces hundreds of cases and the analysis attempts to establish the relative merits of the various procedures and tests employed. After outlining the development of the field of tests of renal function historically, the author gives the technic for utilizing the phenolsulphonphthalein test. This consists of determining the amount excreted in the urine following its intravenous administration at thirty-five minutes and at sixty-five minutes. He emphasizes the fact that the amount excreted in the first period is often a better index of the renal functional capacity than the total excreted for sixty-five minutes, which, however, he accepts for the standard of comparison with all the other tests used. In determining the coefficient of urea secretion he refers to the difference in opinion of various authorities as to the laws governing urea secretion. He calls attention to the work of Marshall and Davis, which he thinks refutes the assertion of Ambard that the secretion of the urea in the urine varies with the square root of its level in the blood. Marshall's work indicated that the urea secretion varies directly with the level of this substance in the blood and this idea is incorporated in the formula of Van Slyke. The author regards the formulas of both Ambard and Van Slyke as empirical and too theoretical and himself suggests three new formulas. The one, however, which he prefers is $Ur/\sqrt{D}$, in which Ur represents the level of the urea of the blood in milligrams per hundred cubic centimeters and D the urea excreted in the urine for twenty-four hours. However, in the actual performance of this test D is not actually determined but is calculated from data derived from the analysis of the two samples of urine collected. The most satisfactory method of ascertaining the functional capacity of the kidney according to Machado Macedo is to obtain at one and the same time both the phenolsulphonphthalein excretion and the coefficient of urea excretion by the formula of $Ur/\sqrt{D}$. This combination is effected by performing the tests in the morning with the stomach empty; the bladder is emptied, the phenolsulphonphthalein is injected, and at the same time blood is removed for the determination of the blood urea. The urine is then collected at the end of thirty-five minutes and sixty-five minutes. The phenolsulphonphthalein output is determined for each of the two periods and then for the hour as a whole. The urea is determined on a mixture of these two samples of urine and the amount for twenty-four hours calculated on the basis of the amount excreted in this hour. The coefficient of urea excreted is then determined according to the formula presented. Machado Macedo accepts the phenolsulphonphthalein test as the standard, contrasting with it the results of all five formulas for coefficients of urea secretion. He finds that the new formula is most frequently in accord with the results of the phenolsulphonphthalein test. Therefore, he advocates its employment. The book gives evidence that the work has been done with meticulous care by men of broad understanding and great clinical experience. The conclusions represent the final results of prolonged, intensive and controlled investigation.

Der elektrische Faktor der Nierenarbeit. Von Dr. h. c. Rudolf Keller. Paper. Price, 1 mark. Pp. 106, with illustrations. Mährisch-Ostrau: Verlag Julius Kittls Nachfolger, 1933.

This little volume is primarily derived from the author's book "Electricity in the Cell," with the addition of new material and some corrections. The aim of the author is to call attention to the part that can be played by electrical forces in the reabsorption of water and salts as well as, for instance, sugar and urea. It is shown that those parts of the renal tubule in which reabsorption of water takes place carry, by actual measurement, the greatest negative charge. The results are based, mainly, on studies of invertebrates or lower vertebrates but not on mammalian kidneys. It is claimed that these parts have had the same function in the renal organization of all animals. It is shown that the migration in the electrical field could explain the reabsorption of electrolytes and nonelectrolytes, including water, within those limits in which this reabsorption occurs. From the presentation it is evident that we are very far from a complete understanding of normal renal function, and that proof of the electrically governed transportation of substances has been possible, so far, to only a limited extent. The neglect from which the lymphatic apparatus of the kidney has suffered is strongly emphasized. The little book is certainly stimulating.

New Feet for Old: A Simple Statement of Some Recent and Highly Cheering Discoveries Concerning Common Foot Disorders, Their Cause and Cure, for the Mutual Use of Physicians and Patients. By John Martin Hiss, B.Sc., D.O., M.D. With an introduction by Edgcumb Pinchon. Cloth. Price, $2. Pp. 140, with 43 illustrations. Garden City: Doubleday, Doran & Company, Inc., 1933.

The author states that his purpose in writing this book is "that it may help to set cinderella free, and liberate men and women everywhere from a torment and a handicap wholly needless." The book contains a biography of the author, including the statement that he graduated in science, medicine and osteopathy. Many of his statements are based on guesswork and not on accurate statistics: for example that three people out of five in the United States suffer from some form of foot trouble and that 30 per cent of these were under the stress of broken arches and bunions. Another misstatement is that more pain is inflicted on civilized people by foot troubles than all other physical ills rolled into one, that practically all of this is needless, and that nothing is needed for relief except a little knowledge intelligently applied. He states that 90 per cent of foot troubles are directly due to the use of shoes: that broken arches and bunions can be corrected even in extreme cases by simple treatment and without the use of debilitating devices or hazardous operations. He makes the statement "few realize that in carrying the average person a mile, the foot endures a stress of 250 tons." This book contains many "catch phrases," authority for which is not proved. The author's statement is untrue that there is very meager literature, lay or medical, on the foot, and practically none that exhibits a true grasp of its structure and problems. The author describes and illustrates his device known as the classifootometer, the value of which seems to be overestimated. He states that

shoes forcibly mold the feet out of line. Ordinary daily activity, such as walking, running, or standing with the feet out of line, causes misplacement of bone, limitation of foot motion and strain of the arches. He speaks of "unhappy feet." He advises against the use of appliances, pads and supports which "are designed only to smother the symptoms without eradicating the cause." He states that the only obvious, sensible, line of treatment is to eliminate harmful shoes and to "set" the bones and reconstruct the arch. He states that broken arches are corrected by the "re-setting of misplaced bones," and neither cure nor even relief is procurable by any other method, and least of all by the wearing of freak shoes or arch supports. The author also says that most "bunion-ridden" feet can be corrected and made as straight as a Greek athlete's by manipulation plus a simple operation, and without the removal of any normal bone structure whatever. He believes that a bunion is nothing more nor less than dislocation of the great toe joint and that it should be corrected but should never be operated on. Enough has been said to indicate the wholly unreliable and unscientific character of this opus.

Röntgendiagnostik der Knochen- und Gelenkkrankheiten. Von Professor Dr. Robert Kienböck. Heft 2: Knochenechinokokkose. (Abteilung Knochenkrankheiten.) Paper. Price, 7.60 marks. Pp. 105-192, with 19 illustrations. Berlin & Vienna: Urban & Schwarzenberg, 1933.

This monograph, by one of the greatest European roentgenologists, is on the subject of ecchinococcus disease of the bone. The illustrations are of the highest character from the standpoint of pathology and for teaching purposes. The book will be of interest to the roentgenologist and to the specialist in bone pathology. It will be of little interest to the general practitioner.

Undulant Fever and Its Relation to Brucelliasis in Cattle and Swine in Virginia. By Leland Edson Starr, Assistant Animal Pathologist. A Dissertation Submitted to the Graduate Faculty in Candidacy for the Degree of Doctor of Philosophy. University of Virginia, Doctoral Thesis No. D 203. Virginia Polytechnic Institute, Virginia Agricultural Experiment Station, Technical Bulletin 48. Paper. Pp. 50. Blacksburg, Montgomery County, Virginia, 1933.

This carefully conceived monograph deals primarily with the distribution of brucelliasis (Bang's disease, contagious abortion) in domesticated animals in the state of Virginia. During the years 1931 and 1932, 45,285 dairy cattle were tested for Alcaligenes (Brucella) agglutinins; this constitutes approximately 10 per cent of the dairy cattle in Virginia. The serums of 10 per cent of the tested cattle gave positive reactions. While the disease is widely distributed throughout the state, the percentage of infection is greatest in the intensive dairy sections. The serums from cattle in seventeen dairy herds, consisting of 362 animals which had supplied raw dairy products to individuals who subsequently developed undulant fever, gave positive reactions in 47.2 per cent of tests. This demonstrates the close relationship of the infection in dairy cattle to the occurrence of its homologue, undulant fever, in man. The percentage of positively reacting serums was much greater among those employed in abattoirs and among veterinarians than in the general population. Seventy proved cases of undulant fever have occurred sporadically over the state during the period from 1929 to 1933. The greatest number of these cases occurred in the northern part of the state, which corresponds with the area in which Alcaligenes infection is most prevalent among dairy cattle and where comparatively little of the milk is pasteurized. About 40 per cent of the cases of undulant fever appeared to be the result of contact with infected animals or their discharges, while 60 per cent apparently resulted from the ingestion of raw contaminated dairy products. The goat population in Virginia is small and these animals did not appear to be a factor in any of the cases of undulant fever investigated by the author. Of 1,316 samples of swine serums, 3 per cent gave positive reactions. There is little evidence that the occurrence of brucelliasis in swine is of any great importance from the standpoint either of the live stock industry or of the public health. Eradication of Alcaligenes infection in dairy herds should be insisted on by dairymen, veterinarians, public health officers and physicians. It seriously lowers milk production in dairy herds. By cooperating with veterinarians and physicians in their efforts to remove a public health hazard, the dairyman is also conserving his economic interests.

Medicolegal

Malpractice: Death Following Cesarean Section; Failure to Discover Fibroid Tumor.—The defendant-physician was employed to attend the plaintiff's wife during pregnancy and childbirth. He examined her from time to time and found her condition satisfactory. He attended when labor came on, and after he found himself unable to effect delivery by manipulation he used forceps, but without success. He then called in a consultant, an obstetrician of many years' experience, and a cesarean section was performed. In the course of the operation a previously undiscovered fibroid tumor was found in the posterior wall of the uterus. The patient died some sixty hours after she had been operated on. The husband sued the attending physician, charging negligence and unskilfulness. The trial court gave judgment in favor of the physician, and the husband appealed to the court of appeals, first district, division No. 1, California.

No evidence was offered by the plaintiff, said the district court of appeals, to show negligence or unskilfulness on the part of the attending physician in connection with his failure to discover the fibroid tumor prior to the operation, or to show that by the exercise of ordinary care it could have been discovered; and when due care, skill and judgment are exercised, a failure to make a correct diagnosis does not render a physician liable. The plaintiff did not claim that the cesarean section was negligently or unskilfully performed but relied solely on the contention that it should not have been performed. On the plaintiff's behalf, a physician testified that the tumor would not have prevented the normal delivery of the child, that a cesarean section was not necessary and should not have been performed, and that if there were obstructions that prevented delivery a symphyseotomy should have been done. On behalf of the defendant, however, one physician testified that the tumor would have prevented the natural birth of the child and three expert obstetricians testified that symphyseotomy in cases of childbirth was obsolete, that it was highly dangerous and was liable to leave the patient a cripple, that cesarean section was universally used when a baby could not be delivered through the natural channel, and that the course pursued by the defendant-physician was in accordance with good obstetric practice.

The judgment of the trial court for the defendant-physician was affirmed.—*Beni v. Abrons (Calif.), 19 P. (2d) 523.*

Evidence: Testimony of Expert Witness as to Mental Capacity of Grantor.—One Hays, 80 years old, conveyed certain property to the appellant, Harrison. Hays died a few months later and his collateral heirs instituted proceedings to set aside the conveyance. From a judgment for the collateral heirs, Harrison appealed to the court of civil appeals of Texas, San Antonio. He urged error, among other things, in the action of the trial court in permitting a physician to testify that in his opinion Hays did not have the mental capacity to convey the property in controversy. This was error, said the court of civil appeals. It is well settled in Texas that no witness, whether he be a subscribing witness, a medical expert or a layman, can state, over proper objection, his opinion of the capacity of the testator or the maker of any contract, to make such instrument, when such opinion assumes the shape and has the effect of being an opinion on the legal capacity of the party in question. It is therefore obvious that the testimony here complained of was inadmissible over timely and appropriately made objections. The judgment was reversed and the cause remanded.—*Harrison vs. Davis (Texas), 58 S. W. (2d) 1025.*

Evidence: Lay Testimony as to Sickness.—Where two people, said the Supreme Court of Arkansas, come in contact with each other frequently, it is not a matter of expert knowledge for one to tell whether the other appears to be sick or well. These are matters of common experience and observation and a lay witness, after stating the facts on which his opinion is based, may give his opinion in such matters. It is proper, therefore, for a mother to testify that her children after being exposed to ammonia fumes "were pale and sick."—*Southern Ice & Utilities Co. v. Bryan (Ark.), 58 S. W. (2d) 920.*

Society Proceedings

COMING MEETINGS

American Academy of Orthopedic Surgeons, Chicago, Jan. 8-10. Dr. Philip Lewin, 104 South Michigan Blvd., Chicago, Secretary.
Annual Congress on Medical Education and Licensure, Chicago, February 12-13. Dr. W. D. Cutter, 535 North Dearborn Street, Chicago, Secretary.
Society of American Bacteriologists, Philadelphia, Dec. 27-29. Dr. James M. Sherman, Cornell University, Ithaca, N. Y., Secretary.

CENTRAL SOCIETY FOR CLINICAL RESEARCH

Sixth Annual Meeting, held in Chicago, Oct. 27 and 28, 1933

The President, DR. M. A. BLANKENHORN, Cleveland, in the Chair

(Continued from page 1994)

A Study of the Effect of Mercurial Diuretics on Kidney Disease

DRS. E. S. MAXWELL, JOHN W. SCOTT and JOHN HARVEY, Lexington, Ky.: We have had the opportunity of observing the clinical course and of studying the kidneys post mortem in twenty-one patients to whom mercurial diuretics had been given and who died of congestive cardiac failure. One patient had had 240 cc. of salyrgan in 198 doses. Our examination of the literature leads us to believe that this is the largest amount given to a patient who has come to autopsy. Six patients had salyrgan within seventy-two hours of death. Three patients showed calcium deposits in the kidney tubules. The kidneys from other patients dying of congestive cardiac failure, who had not had mercury, were also examined. Our observations seem to us to indicate that: 1. Changes in the kidneys from patients who have had mercurial diuretics are in no way different from those commonly seen in patients dying of congestive cardiac failure without the use of mercury. 2. Continued use of salyrgan in doses of 1.2 cc. or less, has not, in our experience, been followed by permanent kidney damage, and in one instance no damage could be demonstrated after 240 cc. of this drug in such doses had been given. 3. A dose approximating 1.2 cc. (the contents of one ampule) need rarely be exceeded for effective diuresis.

DISCUSSION

DR. B. T. HORTON, Rochester, Minn.: I think that these observations on the use of mercurial diuretics confirm the general clinical impression regarding these drugs. At the Mayo Clinic we have observed fewer toxic manifestations following the use of salyrgan (mersalyl) than of novasurol (merbaphen), and I think there can be no doubt that salyrgan is a safer diuretic drug to use than novasurol. This has been recently demonstrated by a study carried out by Binger and Keith. Toxic manifestations that have been observed, usually followed the use of novasurol, consisted of stomatitis, gross hematuria and diarrhea. At necropsy we have seen in a few instances ulcers in the bowel, particularly in the colon, following the use of these mercurial compounds. It is obvious that an ideal diuretic drug has not yet been found.

DR. MOSES BARRON, Minneapolis: I should like to ask whether the authors saw any changes in the urinary excretion, as to the amount of albumin and casts, following long repeated doses of salyrgan.

DR. JOHN FOULGER, Cincinnati: There is a third mercurial drug used as a diuretic, called novurit. It is better than either salyrgan or novasurol. In one case of extreme edema the patient began to show diuresis in twenty minutes after the injection of 2 cc. of Novurit intravenously. That patient was absolutely refractory to either of the other two drugs. With regard to novasurol, there arises a question as to whether the barbital present would affect toxicity.

DR. ROGER MORRIS, Cincinnati: Some years ago I had a patient who had what is called clinically parenchymatous nephritis, with extreme edema. The skin of the legs was so tense that it cracked and fluid was oozing from it. She had been alkalinized with no benefit. We were able to change the reaction of the urine and then gave her salyrgan in capsules. They were put up in that form for a time for experimental use. I have never seen such marked diuresis following the administration of salyrgan by mouth. The edema cleared up. The amount of albumin in the urine, which was so great that it almost coagulated solid in a tube, decreased and the patient made a good recovery. At no time was there blood in the urine. She died a year later from carcinoma of the breast. Certainly her kidneys were not damaged by the administration of salyrgan so far as one could observe clinically. There was nothing in the urine to indicate renal irritation. She made a good symptomatic recovery.

DR. WILLIAM THALHIMER, Chicago: Dr. Brams, at Michael Reese Hospital, administered novurit intravenously to a number of patients and found that its diuretic action was at least equal to that of salyrgan.

DR. J. W. SCOTT, Lexington, Ky.: I want to reply to Dr. Barron because I know more of the clinical course of the cases than Dr. Maxwell. The case he refers to in which the diuretic has been used for a long period, the patient that had 240 cc. over a course of five years, was not under our observation in the hospital until the last few days of her life. No observations were made on the effect of salyrgan on the amount of albumin and casts in the urine.

Extrapelvic Symptoms Associated with Ovarian Cystic Disease

DR. E. L. SEVRINGHAUS, Madison, Wis.: Frequent occurrence of an involutional group of symptoms in women with demonstrable cystic disease of the ovary led to a study of sixty-three case histories. Some patients were treated as premature cases of menopause until pelvic examination or curettage showed that the pathologic process was one of ovarian cysts with the commonly associated hyperplastic endometrium. The observations in these two groups indicate that complaints usually thought of as due to vasomotor, cardiovascular or psychoneurotic disturbances may be caused by endocrinopathies. In thirty-six of the sixty-three women there were palpably enlarged ovaries. Curettage, done in only thirty cases, demonstrated endometrial hyperplasia. The menstrual histories were characterized by menorrhagia, metrorrhagia, irregular intervals, frequent flowing, and some long periods of amenorrhea. Most of the patients were in the third and fourth decades. The extrapelvic symptoms found so frequently in this group are the same as those seen in the climacteric. Obesity and various abdominal pains occurred in 71 per cent. Nervousness was a complaint in 71 per cent, with attacks of melancholy and frequent weeping in 60 per cent. Hot flashes appeared in 57 per cent, with dyspnea and palpitation without cardiac cause in 56 per cent. Vertigo was bothersome in 49 per cent. Morbid worrying was recognized in 40 per cent, insomnia in 35 per cent, and paresthesias in 24 per cent. The nature of these symptoms and the entire clinical picture would lead to a diagnosis of involutional psychosis except for the age and pelvic condition. It is suggested that the psychic, vasomotor and physical changes are essentially the same as in the climacteric because of similar disturbance to the equilibrium between the anterior pituitary, the ovaries, and such other organs as the suprarenals. Quite apart from the experimental therapy to be described or the hypothesis of endocrine origin suggested, this group of complaints merits attention. Instead of a diagnosis of psychoneurosis following such a history, a detailed inquiry about the menses and gynecologic examination are warranted. There is reason to believe that the cystic ovary is a result of abnormal type of pituitary stimulation to the follicle. The cystic ovary produces the same effect on the uterus that follows continued administration of large doses of theelin in the absence of the functional corpus luteum. Therefore therapy has been planned with use of materials to stimulate luteinization of the cystic follicles. First a potent fraction was prepared from pregnancy urine concentrates and used in twenty of these cases. Later genuine anterior pituitary extracts of assayed potency were employed with thirty-one of the women. A number had both types of treatment. The material is given intravenously, in doses equivalent to 0.5 Gm. of dried anterior pituitary, administered once each month. The time selected is fourteen days after the menses begin, when ovulation should normally occur.

Results of considerable promise were secured, including regulation of menstrual rhythm and volume and relief of the symptoms described.

DISCUSSION

DR. W. J. DIECKMANN, Chicago: Hyperplasia of the endometrium is a very common pathologic diagnosis made on curettings. The curettage is usually performed for abnormal uterine bleeding. In a large number of patients, the pelvic examination indicates an essentially normal pelvis. I believe that the hyperplasia is due to hormonal stimuli and the bleeding in a few cases has been stopped by the injection of serum from pregnant women and also by anterior pituitary. Novak states that the cessation of the bleeding after the injection occurs too quickly for any hormone action to have occurred. My treatment has been empirical. I wish to ask whether or not any curetting was done after the patients were clinically cured.

DR. GEORGE B. EUSTERMAN, Rochester, Minn.: The gastro-intestinal disturbances in these women are of great interest. Many will recall the era when removal of the ovaries for disturbances, real or imaginary, was a popular procedure with some surgeons. Many of these victims were young women, and the premature menopause was eventually followed by gastro-intestinal disturbances, usually of a spastic nature, these spastic phenomena invariably involving the pylorus and colon. Of course, some of these individuals were psychoneurotic from the outset, a fact that might have been responsible for their disturbances as well as for the operation; but many of them had a stable nervous system and the subsequent gastro-intestinal disturbances could only be related to the operation. Of course, in a goodly number of these patients nervous instability in one form or another also supervened.

DR. WALTER W. HAMBURGER, Chicago: I should like to ask Dr. Sevringhaus whether he believes that some of these patients are really psychotic.

DR. E. L. SEVRINGHAUS, Madison, Wis.: I am confident that cure or even relief has not been accomplished by curettage, because the symptoms have continued in spite of thorough curettage. I have been unable to recuret after treatment. I do not say that luteinization has been produced. Curettage and pelvic examinations have not relieved these patients. Also, relief from this pituitary extract given once per month is not permanent. Omission of monthly treatments was followed by return of symptoms usually within two months. There were some unpleasant, rather temporary, reactions simulating the reaction from intravenous injections of histamine, which consist of a bad taste, feeling of extreme warmth, vertigo, and nausea with no emesis, lasting from three to five minutes and coming on a minute after injections. This reaction may continue even though the material has lost its potency judged clinically or by assay in rats. In response to Dr. Eusterman's comments, I think it must be realized that with the climacteric there is disturbance of the particular organ or mechanism in the body that is the most labile. There are certain types of women who will show vasomotor disturbance, which is common, a small portion with a pseudothyrotoxic picture, and then there is the very large fraction who have the psychotic picture. I am sure that the gastro-intestinal disturbances are due to functional change in the part of the body that is most labile. In response to Dr. Hamburger's question, I think that these patients develop definite psychoses, if one calls a woman psychotic because she worries so as to make of herself a nuisance to her family, if she is so unstable, suffering with dyspnea and palpitation, that she cannot take care of her simple household duties, and if she is demanding attention from her husband at every turn. Some women have been sent to the hospital for neuropsychiatric care because of these symptoms. The curious thing is the frequency with which psychotic or semipsychotic pictures are seen, associated with organic lesions of this type.

Parathyroid Hypertrophy and Hyperplasia of Rickets and Osteomalacia

DRS. R. M. WILDER, G. M. HIGGINS and C. SHEARD, Rochester, Minn.: Experiments with chicks reveal that deprivation of vitamin D, insufficient in degree to cause rickets, will produce hypertrophy and hyperplasia of the parathyroid glands, and that the parenteral administration of parathyroid extract in such minor degrees of deprivation of vitamin D prevents this hypertrophy and hyperplasia, but that when the deprivation of vitamin D is extreme, so that rickets is clearly in evidence, the administration of parathyroid extract may restrict but will not prevent the hypertrophy and hyperplasia of the glands. It appears from this and from other evidence that the hypertrophy and hyperplasia of the parathyroid glands of chicks, under conditions of deficiency of vitamin D, depend on their accelerated functional activity. Other observations are interpreted to mean that the supply of parathyroid hormone determines the sensitivity of the organism to the action of vitamin D. A diminished supply of the hormone, as after parathyroidectomy, diminishes the ability of the organism to function normally with restricted amounts of vitamin D; an augmented supply conditions the tissues of the organism so that the effects of the vitamin are more intense and so that amounts of the vitamin that otherwise would not prevent rickets do prevent rickets. By virtue of the capacity of the parathyroid glands to accelerate the rate of supply of their product, and owing to the resulting conditioning of the tissue (increased sensitivity to vitamin D), the organism is enabled to withstand periods of relative deficiency of vitamin D which otherwise would produce rickets or osteomalacia. This compensatory mechanism is adequate to protect against relative degrees of deficiency of vitamin D; it is inadequate, as would be expected, when deficiency of vitamin D is extreme.

DISCUSSION

DR. JOSEPH F. BORG, St. Paul: I should like to ask the authors whether in their cases of marked vitamin D deficiency with parathyroid treatment they found any changes in the blood calcium.

DR. RUSSELL M. WILDER, Rochester, Minn.: In the experiment with only slight deficiency of vitamin D, the blood calciums were not depressed, yet the parathyroid glands enlarged. This seems to point to the direct stimulation of the parathyroids, in vitamin D deficiency, rather than to stimulation by the hypocalcemia that accompanies conditions of more severe vitamin D deficiency.

The Association of Pellagra and Vincent's Infection

DRS. TOM D. SPIES and HENRY A. DEWOLF, Cleveland: Six typical cases of pellagra, with stomatitis and glossitis, were selected for study. Repeated smears of the mouth and, in two instances, of the vagina showed a conspicuous number of spirochetes and fusiform bacilli as well as a predominance of these two organisms. The patients were then placed on a restricted diet of water and 500 Gm. or more of autoclaved yeast; their lesions promptly remitted and subsequent smears from the same areas in the mouth and vagina showed a great decrease in the number of spirochetes and fusiform bacilli. The clinical significance of these observations is shown to be important in that two patients, confined to a hospital for contagious diseases while being treated for severe Vincent's infection, were found by a consultant to have extensive lesions of pellagra.

DISCUSSION

DR. JOSEPH L. MILLER, Chicago: Dr. H. Gideon Wells has been doing some work on the etiology of ulcers in the buccal cavity. He believes that fusiform and spirilliform bacilli are always secondary invaders. They are not responsible for the lesion but find here a suitable place for their development.

Studies on Etiology and Treatment of Neutropenic States

DR. CHARLES A. DOAN, Columbus, Ohio: The importance of differentiating the many clinical conditions in which leukopenia appears as a prominent part of the laboratory examination is evident. More than 80 per cent of the patients referred to our group with leukopenia during the past three years have not been of the types that fall into one of the several subdivisions of the original Schultz syndrome. An uncritical attempt to treat all leukopenias by any one method will continue to result in a large proportion of failures. An understanding of the underlying mechanism in the individual case is the first essential to rational therapy. This may best be secured by a careful study of the quality and character of the blood cells present, interpreted in the light of a careful history and physical examination.

A special study during the past year of the blood of patients in whom a severe infection definitely preceded the development of leukopenia resulted in the isolation of several organisms: Friedländer's bacillus, Streptococcus haemolyticus, Streptococcus viridans (two strains) and Staphylococcus aureus. With the first two we were able to reproduce the peripheral blood and bone marrow pictures observed in the respective patients from whom these strains were isolated. Intraperitoneal and intramuscular implantations of living cultures in celloidin or gelatin capsules and intravenous inoculation of cultures and sterile filtrates were made. I conclude that it is not so much the type of organism as the state of reactivity of the host which conditions the level of leukocytic response under these conditions, and that exsanguination-transfusions present the best hope from a therapeutic standpoint.

In certain cases of chronic, noninfectious, deficiency neutropenia with a concomitant moderate degree of secondary anemia and thrombopenia, intravenous liver extract has controlled the levels of all three bone marrow elements.

The effect of varying small doses of x-rays on myelopoiesis in pigeons has been studied in the attempt to determine the stimulatory versus the destructive effects of this suggested method for treating neutropenia. I have yet to find a stimulatory dose which does not show some prior evidence of myelocytic destruction. I therefore believe that roentgen treatment is contraindicated whenever a hypoplastic myeloid marrow underlies a given leukopenic state. In this type of case some nucleic acid or nucleotide derivative continues to offer the best promise of successful myelopoietic stimulation.

Primary Granulocytopenia After Administration of Benzene Chain Derivatives

DRS. F. W. MADISON and T. L. SQUIER, Milwaukee: The increased incidence of primary granulocytopenia (agranulocytic angina) has paralleled the increase in use of drugs containing a barbiturate combined with amidopyrine. Analysis of a series of thirteen consecutive cases has shown that all the patients had taken, over varying periods of time prior to the onset of their acute symptoms, one or more drugs containing benzene ring derivatives. All of these cases occurred either in physicians, nurses or patients under a physician's care prior to the onset of the granulocytopenia. Seven patients were under close medical observation and were known to have had normal white cell response during the illness that preceded the granulocytopenia, and after recovery developed granulocytopenia during the period of convalescence. All of them had been given drugs containing the benzene ring. In five of the cases, benzene ring derivatives were used during the treatment of the granulocytopenia and four patients died (mortality, 80 per cent), while the one patient living has a chronic granulocytopenia. In eight of the cases benzene ring derivatives were absolutely avoided and only two patients died (mortality, 25 per cent), one within thirty-six hours, and the other failed to show any evidence of response to treatment. One patient who had made an excellent recovery from acute granulocytopenia showed marked fluctuations in the granulocyte count and was found to have been taking a benzene ring derivative. When this was stopped, the count promptly stabilized at a normal level. Two patients after recovery showed an abrupt drop in the granulocyte count after a single isolated dose of a benzene ring derivative. All who recovered and have avoided the use of these drugs are living after periods of from three months to two years.

Eleven rabbits were given allyl-iso-propyl barbituric acid (allonal) with amidopyrine by mouth in relatively large doses. One rabbit showed an abrupt drop in the granulocyte count on the twenty-sixth day of medication and died on the thirtieth day. Preceding death there was complete absence of granulocytes in the peripheral blood and the picture was characteristic of primary granulocytopenia. On necropsy there were no grossly abnormal observations, except that on the tongue there were a number of small whitish blebs and a small pit on the left side of the tongue as from an ulcer. The bone marrow was absolutely lacking in cells of the granular series. None of the other rabbits showed the blood picture of granulocytopenia, but three were found to have definitely hypoplastic bone marrow on necropsy and in these marked diminution of eosinophil granules was a striking feature.

DISCUSSION ON DEFICIENCY OF BLOOD CELLS

DR. C. H. WATKINS, Rochester, Minn.: In a large percentage of our cases of agranulocytosis, there seems to be a possibility of an idiosyncrasy to amidopyrine or to one of the derivatives of barbituric acid. A great deal of clinical and experimental work will be necessary to settle this question, but it seems reasonable to assume that a leukopenic syndrome may represent the outward manifestation of an idiosyncrasy to a drug of this class. I have one patient who has had a total of twelve attacks of agranulocytosis at intervals of every one or two months for the past two and a half years. This patient had been taking amidopyrine for migraine. Since she has discontinued the use of this drug and of all other sedatives, she has had no further attacks. One other patient seems to be able to produce leukopenia at will by taking 10 grains (0.65 Gm.) of amidopyrine. If agranulocytosis sometimes is the result of idiosyncrasy to drugs, I think it must also be assumed that there is a primary dysfunction of the bone marrow, so far as reduction of leukocytes is concerned, for there is no change in the blood of most persons following the use of amidopyrine or of any of the derivatives of barbituric acid.

DR. C. W. BALDRIDGE, Iowa City: I should like to ask Drs. Madison and Squier whether they think that the action of these drugs is the same as that of benzene, because years ago when benzene was given in leukemia the action was not nearly so rapid as the reactions they have described.

DR. SAMUEL B. GRANT, St. Louis: I have had an experience with one patient that confirms these studies of Drs. Madison and Squier. A patient with arthritis who had taken amidopyrine regularly for several months discontinued the drug on admission to the hospital for cholecystectomy. During convalescence from the operation she was given a dose of a sedative combined with amidopyrine. A few hours later she had a chill followed by transient unexplained fever. Blood counts were not made. A few weeks later she started taking amidopyrine and immediately had another chill and rapid rise of temperature. It happened that blood counts four days previously had been normal. On the following morning the leukocyte count was 2,000, with 2 per cent granulocytes. I had the feeling that the amidopyrine had something to do with it and she was never allowed to take it again.

DR. P. S. HENCH, Rochester, Minn.: A patient of mine with chronic infectious arthritis developed on September 12 a mild fever (99-99.5 F.) but no chill. The white blood count, which had recently been 8,600, was found to be 2,100. In the next three days it dropped to 1,400; the differential count showed 49 per cent lymphocytes and 9 per cent neutrophils. Dr. Watkins suggested that the neutropenia might be due to allonal or amidopyrine, which the patient had been given in small doses for six days. All drugs were stopped and on September 17 the white blood cells had returned to 6,000, with a normal differential count. The patient felt quite well throughout the episode. September 23, he developed a jaundice with a serum bilirubin of 12.5 mg. direct reaction. The jaundice lasted one week and was not associated with a change in red count or hemoglobin. Have Drs. Madison and Squier noted jaundice in any of their cases?

DR. JOHNSON MCGUIRE, Cincinnati: I should like to add one case to those reported by Drs. Madison and Squier. The patient was an elderly woman who developed a primary leukocytopenia. Before the development of symptoms she had been taking occasional doses of allonal and amidopyrine. The white count dropped to 1,000 and the granulocytes disappeared. Pneumonia, perirectal necrosis and myocardial insufficiency appeared consecutively. There was an increase in the white blood cells to 6,000, with 80 per cent neutrophils, the day before death.

DR. JOHN FOULGER, Cincinnati: I should like to ask whether Drs. Madison and Squier consider that barbital with or without phenol or amidopyrine is a causative factor. In their animal experiments they used what is really pure allonal. In the treatment of patients one usually gives allonal plus amidopyrine. Do they think the action is due to the phenol group or sometimes to the barbituric acid group or to the synergistic action of the two?

DR. RICHARD M. MCKEAN, Detroit: I should like to ask whether the patch test for cutaneous sensitization or for intracutaneous injection with the benzene chain group was used in any of these cases as evidence of a true allergic phenomenon.

DR. CARROLL L. BIRCH, Chicago: Was an attempt made to determine whether there was a redistribution of these cells or a definite regeneration? This constant drop may be due to redistribution of the white cells rather than to a destruction.

DR. F. W. MADISON, Milwaukee: In answer to Dr. Baldridge's question, whether we think the action is the same as the action of benzene, I would say no. We started out with the feeling that perhaps it was an action similar to that of benzene. We abandoned that very soon. The fact that we see these acute drops not only experimentally but clinically rules out the toxic effect that has previously been described. Whether there is any relation between the two types we do not know. We have a definite feeling that we may be dealing with a peculiar type of allergic response, the nature of which we do not know and have not been able to determine. In answer to the question about the chemistry, I would say that the allonal we used in experimental rabbits is the same as is used clinically. Whether the barbituric acid derivatives without amidopyrine are capable of causing this type of reaction, we do not know. We have wondered about it, but we have no definite evidence except that recently we gave a patient amytal alone and had no response in the total white count. That there may be a synergistic action is entirely possible. In answer to Dr. McKean, we have not done the patch tests. We rather doubt that we shall get any evidence of skin sensitivity.

Mechanism of the Production of Anemia

DR. RAPHAEL ISAACS, Ann Arbor, Mich.: A study of the sternal bone marrow of seventy-five patients with various types of anemia was made, serum suspensions of the marrow being used for accurate counts of the number of cells per cubic millimeter and for differential counts. Seven stages in the development of the erythrocyte can be identified in the bone marrow: a primitive blast (lymphoid cells), the megaloblast, the macronormoblast, the normoblast, the reticulocyte, the granule red blood cell and the mature erythrocyte. The primitive cells are increased in number in chronic nephritis and pernicious anemia but are decreased in the anemia of acute hemorrhage, in aplastic anemia and in Hodgkin's disease treated with x-rays. In the two latter conditions and in chronic nephritis there is an arrest of development at this stage, but in pernicious anemia (untreated) the inhibition develops at the megaloblast stage. Megaloblasts are reduced in number in the other diseases enumerated. The macronormoblast is the predominant stage after acute hemorrhage, but the actual numbers are also increased in pernicious anemia in beginning remission. The normoblastic stage is the predominant form in normal bone marrow, and these cells are decreased in number in all anemias. The macronormoblastic growth in acute hemorrhage is not the result of inhibition of growth ("failure to shift to the right"), but a so-called shift to the left because of inability of the cells to ripen fast enough to meet the demands of the peripheral circulation. The megaloblast stage is sensitive to the effects of liver or stomach medication; the macronormoblast is "stimulated" by iron; no known therapeutic agency affects the maturation of the primitive blast.

DISCUSSION

DR. C. W. BALDRIDGE, Iowa City: I should like to ask Dr. Isaacs whether he thinks that iron actually stimulates blood formation or merely furnishes a substance that is necessary for normal hematopoiesis; also, whether or not iron will work as satisfactorily in the anemia or chronic nephritis as it will in the anemia of hemorrhage.

DR. ROGER MORRIS, Cincinnati: After the cells have responded to liver therapy, will they return to the macronormoblast stage? If the macronormoblasts predominate after the response to liver treatment, have you tried carrying the patient along with iron to see whether the improvement will continue?

DR. RAPHAEL ISAACS, Ann Arbor, Mich.: In answer to Dr. Baldridge, I believe that the iron stimulates the formation of normoblasts, as the blood remains stationary until iron is given. In chronic nephritis, iron alone will not stimulate the cells to grow. In reply to Dr. Morris: If the bone marrow cells respond to liver, they quickly return to normal. The first stage is a decreased number of megaloblasts and then the bone marrow becomes absolutely normal as far as I can tell. The plan of carrying the patient along with iron after the megaloblasts have responded to liver treatment presents some complications. Patients with pernicious anemia have stored in their bodies enough iron to carry them through, so that it is doubtful whether additional iron will have any marked effect.

The Failing Heart in Acute Infections

DR. LOUIS M. WARFIELD, Milwaukee: The generally accepted view that the heart fails in acute infections is probably incorrect. So-called heart failure is actually peripheral collapse. The customary methods employed to stimulate the heart should be abandoned and measures used to combat the peripheral collapse.

DISCUSSION

DR. J. W. SCOTT, Lexington, Ky.: I should like to ask Dr. Warfield if he has had any experience with carbon dioxide by inhalation in the treatment of peripheral collapse. The triad of circulation volume, depth of respiration and general tonus, the latter actuating the venopressor mechanism, is of chief importance in the consideration of peripheral collapse. It is a remarkable fact that each one of the components of this triad is stimulated by the inhalation of carbon dioxide.

DR. WARREN B. COOKSEY, Detroit: I should like to ask Dr. Warfield whether he has tried concentrated solution of dextrose intravenously in this condition, or whether he would care to make any comment on its use in these patients.

DR. MOSES BARRON, Minneapolis: I should like to ask Dr. Warfield how he would explain the apparent myocardial weakness following many acute infections. After influenzal and streptococcic infections I often find a definitely low cardiac reserve, as evidenced by dyspnea on slight exertion plus a rapid pulse. This must be due to a myocardial weakness. It is undoubtedly true that the greatest part of the cardiovascular effect is from peripheral collapse, but there is also present a temporary change in the myocardium.

DR. MORRIS H. NATHANSON, Minneapolis: Although it is true that the heart is usually not functionally impaired in infections, there is one infectious disease in which there is evidence that the myocardium is seriously damaged and in which the myocardial changes undoubtedly play the chief part in the outcome. This is diphtheria. Several years ago I carried out an electrocardiographic study of patients suffering from diphtheria and found marked changes. In certain cases these changes extend into convalescence and the only patients showing circulatory collapse were those who had the abnormal electrocardiograms. These electrocardiographic changes would return to normal after four to six weeks. I was also able to reproduce these abnormal electrocardiograms in cats by the injection of diphtheria toxin. I also carried out a study with the electrocardiograph in other infectious diseases and found that, as compared with diphtheria, high grade electrocardiographic changes are relatively rare even when the patient shows signs of severe circulatory failure. These observations support the concept that the peripheral mechanism is most frequently the basis for the circulatory failure in most infectious diseases.

DR. L. M. WARFIELD, Milwaukee: In answer to Dr. Scott, I have never tried carbon dioxide because I have always felt that what the heart needed was oxygen. I have used oxygen in cases of surgical collapse following operation. I have seen one patient, a young woman, to whom 12 liters of fluid was given in twenty-four hours by means of the jejunal tube, the rectum and intravenous injection. She came out of the apparent death collapse and is well. That I have attributed to the enormous amount of fluid plus the oxygen. In reply to Dr. Nathanson, I specifically stated that diphtheria was one of the diseases that cause myocardial failure. His discussion is interesting. I think diphtheria, septic emboli and possibly rheumatic fever are the diseases more prone to cause myocardial failure. As to concentrated dextrose, I have given it. The only objection to giving it as well as saline solution is that they leave the blood vessels rapidly. The difficulty has been that too little

saline solution has been given, the amount being 1,000 cc. when it should have been 4,000. With regard to the question that after influenzal infections the myocardium is left in a very labile state, I think that one has to admit that. I do not think that this is any argument against the fact that when these people die of so-called cardiac failure they die of peripheral collapse rather than of cardiac failure on the part of the myocardium, though the myocardium may be actually diseased. If the heart is beating too rapidly, the recovery period is so short that there is decreased circulation in the heart and anoxemia occurs. I do not know what one could do if one could stimulate the heart or what good it would do: the patient's condition is hopeless.

Clinical Experience with an Antitularense Serum

DR. LEE FOSHAY, Cincinnati: During the past two years, seventy patients with tularemia have been treated with an antitularense goat serum. The serum appears to possess therapeutic value, as judged by the clinical responses obtained. A quantitative analysis of data from the treated group compared with those from 121 control patients confirms the clinical impression that significant changes in the course of the disease are due to the serum therapy. The mean duration of disease has been reduced by almost one half and the duration of adenitis has been diminished by more than one third.

Heart Movie: The Electrocardiographic Registration of the Normal Heart Beat

DR. CLAYTON J. LUNDY, Chicago: This animated motion picture starts with a review of the anatomy of the heart and its conduction system. There follows the showing of the origin of the stimulating impulse in the sinus node and its spread over the entire heart simultaneously with the formation of the electrocardiogram. It includes the showing of auricular and ventricular systole and diastole correlated with the electrocardiogram, intra-auricular and intraventricular pressure, and the electrically reproduced heart sounds, together with the action of the aortic, mitral and tricuspid valves.

The Etiology of Felty's and Related Syndromes

DR. HARRY A. SINGER, Chicago: In 1924, Felty described the occurrences in five adult patients of a syndrome characterized by chronic deforming arthritis, splenomegaly, lymphadenophy, leukopenia and cutaneous pigmentation. None of the five patients were followed to autopsy. Felty offered two explanations for this unusual clinical syndrome: (1) that the manifestations are part of one pathologic process; (2) that the syndrome is merely a confusion of two separate clinical entities, i. e., arthritis and Banti's disease, occurring coincidentally in the same individual. Felty favored the first explanation chiefly on the basis of the law of probability. In 1932, Hanrahan and Miller recorded a case of Felty's syndrome in which splenectomy was followed by "markedly beneficial effects." The question of the nature of the underlying disease process was left *sub judice*. I have studied two adult patients in whom the clinical picture was that of Felty's syndrome. In both instances, cultures during life from the blood stream yielded Streptococcus viridans. Both patients died and at autopsy presented the typical bacteriologic and anatomic evidence of sepsis lenta. The evidence obtained in these two cases serves to account for the Felty syndrome, Chauffard-Still's syndrome and Still's disease on one common pathogenic basis. Furthermore, the evidence indicates that at least a certain number of so-called primary splenic anemias of the Banti type really represent instances of sepsis lenta.

DISCUSSION

DR. P. S. HENCH, Rochester, Minn.: Chauffard in 1896 and Herringham in 1909 called attention to the association of arthritis in adults with splenomegaly and hepatomegaly. Anemia was not emphasized. In 1897, Still noted arthritis in children with anemia, enlarged lymph glands and enlarged spleen but didn't mention hepatomegaly. Others have since reported cases of arthritis variously presenting a reticuloendothelial response, with leukopenia or leukocytosis. Felty's syndrome concerns itself with a chronic arthritis, anemia, enlarged glands and enlarged spleen, but the liver is not mentioned. While it is well to point out such variations, it seems unwarranted to give each combination a new name. As chronic infectious (atrophic) arthritis progresses, anemia is expected and a moderate glandular enlargement may be viewed without concern. If the glands are immoderately enlarged, biopsy may reveal, however, an associated tuberculosis, Hodgkin's disease or even cancer. One should not expect to find splenomegaly in arthritis oftener than in 1 per cent of the cases or less. In about one half of the cases I have seen in which splenomegaly has been found, the liver was also enlarged. I do not know whether these reactions represent a complication or a defense mechanism on the part of the reticulo-endothelial system. If the lymph glands are the first line of defense, the spleen and liver the secondary defenses, one should think twice before advising splenectomy. Only temporary benefit was noted in one such case, probably the nonspecific temporary improvement any surgical operation may provide. The studies of Singer and of Felty, I believe, help to support the infectious theory, for such tissue responses, whether they are complications or defense reactions, are more suggestive of reaction to infections than to a metabolic or endocrine affair.

DR. H. M. CONNER, Rochester, Minn.: There are certain indications for splenectomy that nearly every one accepts. One is the presence of Banti's disease; another, purpura hemorrhagica, and still another, hemolytic icterus. In these diseases, especially the latter two, splenectomy usually gives symptomatic cure. I doubt whether any disease in which blood cultures are positive, such as Dr. Singer showed today, will respond to splenectomy. It seems likely that the spleen may be a reservoir of bacteria in these cases, but to remove that reservoir in the presence of such widespread distribution of the organisms might be detrimental and almost certainly would not be beneficial.

DR. C. W. BALDRIDGE, Iowa City: I have seen two patients with a syndrome similar to that described by Felty. These two patients may have had Banti's disease with arthritis, since one had definite cirrhosis of the liver and both developed ascites. Does Dr. Singer wish to imply that this disease began eight years before death as a bacteremia or septicemia or that the latter was superimposed on a disease characterized by chronic leukopenia?

DR. M. A. BLANKENHORN, Cleveland: The chairman is interested in the fact that in both patients the "findings in the heart were the same" and that Aschoff bodies were described only in the first case. Perhaps Dr. Singer omitted mentioning Aschoff bodies in the second case. If Aschoff bodies were found only in the first case, will Dr. Singer say whether he and Dr. Jaffé consider the first case as presenting rheumatic fever and the second case as not presenting rheumatic fever?

DR. HARRY SINGER, Chicago: I agree with Dr. Hench that splenectomy in the presence of a sepsis is likely to do much more harm than good. In suggesting that the spleen might act as the focus of infection, I was merely attempting to reconcile or explain the improvement in Hanrahan and Miller's patient following splenectomy. Whether or not the immediate beneficial results will continue remains to be seen. The question asked by Dr. Baldridge as to whether the sepsis demonstrated at autopsy was the primary disease is pertinent. The evidence for assuming that the sepsis lenta was of long standing in the cases presented is indicated by the character of the changes involving particularly the reticulo-endothelial system. These changes are the ones observed in cases of subacute bacterial endocarditis having an established duration of many months or even several years. Furthermore, the histologic features observed in the extirpated spleen in the case described by Hanrahan and Miller are practically identical with those found in the spleens obtained at autopsy in my two cases. Splenectomy was performed by Hanrahan and Miller while their patient was comparatively well. Dr. Blankenhorn asked regarding the specificity of Aschoff nodules found in my first case. Dr. R. H. Jaffé, our pathologist, has accumulated convincing evidence to show that the same organism can produce subacute bacterial endocarditis and rheumatic fever. The type of lesion produced is dependent on the defense reaction of the host rather than on a selective strain or type of streptococcus. I have seen Aschoff bodies in several cases of subacute bacterial endocarditis, sepsis lenta and scarlet fever in which there was no reason to assume the presence of a coexisting rheumatic infection. Aschoff bodies cannot therefore be considered pathognomonic of rheumatic fever.

(To be continued)

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

53: 177-348 (Sept. 15) 1933

Development of Striated Muscle and Tendon from the Caudal Myotomes in the Albino Rat and the Significance of Myotomic Cell Arrangement. E. O. Butcher, Clinton, N. Y.—p. 177.

Cyclic Histologic Variations in Anterior Hypophysis of the Sow (Sus Scrofa). R. Cleveland and J. M. Wolfe, Nashville, Tenn.—p. 191.

Human Embryo of Presomite Period from Uterine Tube. J. E. Kindred, Charlottesville, Va.—p. 221.

Localization of Mineral Salts in Cells of Some Mammalian Tissues by Micro-Incineration. G. H. Scott, St. Louis.—p. 243.

Observations on Structure of Vagus Nerve. S. W. Ranson, J. O. Foley and C. D. Alpert, Chicago.—p. 289.

Development of Young Rabbit Blastocysts in Tissue Culture and in Grafts. A. J. Waterman, Brooklyn.—p. 317.

Archives of Surgery, Chicago

27: 427-628 (Sept.) 1933

Malignant Tumors of the Male Breast. M. P. Neal, Columbia, Mo.—p. 427.

Surgery of Sesamoid Bones of the Great Toe: Anatomic and Clinical Study, with Report of Forty-One Cases. G. A. L. Inge and A. B. Ferguson, New York.—p. 466.

The Curling Ulcer: Study of Intestinal Ulceration Associated with Suprarenal Damage. C. W. McLaughlin, Philadelphia.—p. 490.

Points in the Surgery of the Frontal Lobes of the Brain. J. R. Learmonth and H. C. Voris, Rochester, Minn.—p. 506.

Review of Modern Treatment of Burns. J. P. Barnes, Houston, Texas.—p. 527.

Iodized Oil in Bronchiectasis, Including a Study of Two Cases Following Lobectomy. J. A. Weinberg, Omaha.—p. 545.

*Spondylolisthesis and Prespondylolisthesis. S. Kleinberg, New York.—p. 565.

*Calcification of the Twort Mouse Carcinoma (in Vivo) by Means of Viosterol. J. W. Spies, Peiping, China, and G. P. Lyman, San Francisco.—p. 588.

Review of Urologic Surgery. A. J. Scholl, Los Angeles; E. S. Judd, Rochester, Minn.; L. D. Keyser, Roanoke, Va.; J. Verbrugge, Antwerp, Belgium; A. A. Kutzmann, Los Angeles; A. B. Hepler, Seattle, and R. Gutierrez, New York.—p. 602.

Spondylolisthesis and Prespondylolisthesis.—Kleinberg states that prespondylolisthesis and spondylolisthesis are due to a congenital defect in the laminae of a lumbar vertebra, as a result of which the posterior arch of the vertebra is connected to the body only by fibrous tissue. The diagnosis of prespondylolisthesis is made by finding a defect in the laminae of the lumbar vertebra without any displacement of the body. The clinical symptoms include pain and weakness of the back and a variable degree of disability. A marked lordosis should make one suspect the existence of a prespondylolisthesis. When the diagnosis of prespondylolisthesis is established, fusion of the vertebrae should be advised for the purpose of preventing an actual dislocation. Spondylolisthesis is now being recognized with increasing frequency as an important cause of disability of the back. The signs, symptoms and roentgen observations of spondylolisthesis vary in degree. The subjective symptoms are rarely in direct proportion to the degree of bony deformity. Spondylolisthesis may exist for many years without causing symptoms or disability. When symptoms are present, they may be relieved by external support of the back or, in the more resistant cases, by fusion of the vertebrae. In all cases in which operations were performed, the posterior arch was found to be abnormally movable and manifestly connected to the vertebral body only by fibrous tissue. The patients operated on were relieved of their symptoms.

Calcification of Mouse Carcinoma with Viosterol.—Spies and Lyman investigated whether viosterol might produce calcification of an actively growing carcinoma and, if so, what effect it and the generalized deposition of calcium in the viscera might have on the biologic behavior of the tumor and its host. Results demonstrate that abnormal amounts of calcium were deposited in the experimental tumor and in the viscera of mice that were given intraperitoneal injections of viosterol over a period of from twenty-nine to sixty-one days. The longer the interval of time, the greater was the intensity of calcification. The authors also observed that the mice which were given only the usual diet did not show calcium by the von Kossa histologic method except to a minor degree in two instances, these being limited to the tumor and probably due to viosterol secured by coprophagy. Necrosis of the neoplasms seemed as marked in the control animals as in those which had been given large amounts of viosterol. Sesame oil alone had no effect on the deposition of calcium in either the neoplasm or the organs. The natural course of the Twort carcinoma did not seem to be influenced significantly by the giving of large amounts of viosterol. After approximately thirty-four days the toxic effects of the activated viosterol were manifested in obvious derangements in the general condition of the animals.

Arkansas Medical Society Journal, Little Rock

30: 77-88 (Sept.) 1933

Birth Injuries. S. B. Hinkle, Little Rock.—p. 77.

The Present Status and Future Possibilities of Electrosurgery. J. A. Foltz, Fort Smith.—p. 82.

Canadian Medical Association Journal, Montreal

29: 227-348 (Sept.) 1933

Experimental Intestinal Obstruction. N. B. Taylor, C. B. Weld and G. K. Harrison, Toronto.—p. 227.

Recent Advances in Physiology of Capillary Circulation. F. R. Miller, London, Ont.—p. 237.

*Kitten Carriers of Microsporon Felineum and Their Detection by Fluorescence Test. A. M. Davidson and P. H. Gregory, Winnipeg, Manit.—p. 242.

Intrapleural Pneumolysis with Galvanocautery. E. C. Janes, Hamilton, Ont.—p. 247.

Resuscitation of New-Born Babies Showing Narcosis. E. Shute and M. E. Davis, Chicago.—p. 252.

Primary Carcinoma of the Lung in a Child. J. M. Beardsley, Providence, R. I.—p. 257.

Sterilization of the Feebleminded. H. A. Bruce, Toronto.—p. 260.

Prevention of Neonatal Mortality. A. Brown, Toronto.—p. 264.

Essential Constipation: Its Diagnosis and Treatment. C. J. Tidmarsh, Montreal.—p. 269.

*Blood Tests in Assessment of the Constitutional State in Tuberculous Patients. S. L. Cummins, Cardiff, Wales.—p. 275.

Practical Application of Our Knowledge of the Biliary System. D. S. MacNab and E. P. Scarlett, Calgary, Alta.—p. 281.

Achalasia of the Cardia (Cardiospasm). G. A. Wainwright, Owen Sound, Ont.—p. 287.

Cervical Cancer. W. A. Scott, Toronto.—p. 290.

Electrocardiographic Changes in Pulmonary Tuberculosis. T. G. Heaton, Toronto.—p. 294.

Congenital Hernia of the Ovary and Tube into the Canal of Nuck: Report of Case. A. E. Harbeson, Kingston, Ont.—p. 295.

Kitten Carriers of Microsporon Felineum.—Davidson and Gregory state that in approximately half of the outbreaks due to Microsporon felineum some evidence indicated that infection had occurred from a cat or a dog. A boy, aged 5 years, became infected with M. felineum. The first lesions appeared from two to three weeks after he had been given an apparently healthy kitten. When the kitten was examined under ultraviolet rays passing a filter of Wood's glass, fluorescent hairs were observed which proved to be infected with the same species of fungus as that infecting the boy. The patient, while undergoing treatment, was given a healthy kitten to play with. In from three to four weeks this animal developed a typical ringworm lesion on the nose. A third kitten was artificially inoculated in the ear with M. felineum. After the resulting lesion had healed, a few fluorescent, infected hairs remained around the eyes during three months, and the animal is considered to have been, during this period, a ringworm carrier. The authors suggest the extension of the fluorescence test to detect Microsporon infection in cats and kittens as a practical prophylactic measure.

Blood Tests in Tuberculous Patients.—Cummins devised a micro method for the sedimentation test which is applicable to a sample of blood collected by pricking a finger. The same sample of citrated blood is used, after the reading of the height of the blood cell column at the end of one hour, for the estimation of the total leukocytes, and the author has satisfied himself that the count remains practically unaltered for at least twenty-four hours. The enumeration of lymphocytes

and monocytes is carried out on a dry film stained by Leishman's method and is combined with the estimation of the von Bonsdorff (Arneth) count. He claims that these methods afford a valuable amplification to the grading of cases undergoing sanatorium treatment, and that they are invaluable in estimating the results of gold therapy and other new methods of treatment.

Journal of Bacteriology, Baltimore

26: 229-330 (Sept.) 1933

Stability of Cultures of Rhizobium. Lois Almon and I. L. Baldwin, Madison, Wis.—p. 229.
Studies in Micrurgical Technic. J. A. Reyniers, Notre Dame, Ind.—p. 251.
*Bacterial Variation, with Especial Reference to Pleomorphism and Filtrability. L. F. Rettger and Hazel B. Gillespie, New Haven, Conn.—p. 289.
Reaction of Antiserums for Bacillus Actinoides. J. B. Nelson, Princeton, N. J.—p. 321.
Fermentation of Sodium Malonate as Means of Differentiating Aerobacter and Escherichia. E. Leifson, Baltimore.—p. 329.

Bacterial Variation.—Rettger and Gillespie state that Bacillus megatherium is extremely susceptible to changes in environment, giving rise to morphologic types that vary over a wide range from the more nearly "normal" to most extreme forms. On the transfer of cultures that have undergone such cellular transformation to the usual fresh culture medium, the organism again assumes its regular cell outline and orientation. In old cultures pronounced autolysis is another important feature, and at times empty cells may be seen which resemble flattened tubes or "sausage skins" and which are firm and highly resistant to mechanical injury. These must be regarded as definite cell envelops or membranes. Repeated attempts to demonstrate the occurrence of a filtrable phase or phases in Bacillus megatherium, Alcaligenes abortus and melitensis, and the organisms commonly present in raw sewage resulted in failure.

Journal of Biological Chemistry, Baltimore

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Chemical Composition of the Human Fetus. M. H. Givens, Chicago, and Icie G. Macy, Detroit.—p. 7.
Quantitative Micro-Analysis of Plant Juice for Reducing Sugars and Sucrose. F. S. Schlenker, Kingston, R. I.—p. 29.
Concentration and Probable Chemical Nature of Vitamin G. Lela E. Booher, New York.—p. 39.
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Gastric Juice: I. Studies on Proteins of Gastric Juice of Humans. L. Martin, Baltimore.—p. 113.
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Chemistry of the Lipids of Yeast: I. Composition of the Acetone-Soluble Fat. M. S. Newman and R. J. Anderson, New Haven, Conn.—p. 219.
Id.: II. Composition of Phospholipids. M. S. Newman and R. J. Anderson, New Haven, Conn.—p. 229.
Determination of Thyroxine in Thyroid Gland. N. F. Blau, New York.—p. 269.
Analysis of Chloride in Tissues. F. W. Sunderman and Priscilla Williams, Philadelphia.—p. 279.
Dietary Factor Concerned with Carbohydrate Metabolism. L. G. Wesson and Florence C. Murrell, Nashville, Tenn.—p. 303.
Studies on Purine Metabolism: II. Fate of Guanine in Organism of Dog. F. W. Allen and L. R. Cerecedo, Berkeley, Calif.—p. 313.
Derivatives of Monoacetone Xylose. P. A. Levene and A. L. Raymond, New York.—p. 317.

Journal of Clinical Investigation, New York

12: 741-994 (Sept.) 1933

Studies on the Action of Diuretics: II. Effect of Salyrgan on Water Content of Plasma as Measured by Refractive Index. H. L. Schmitz, Chicago.—p. 741.
Studies in Congestive Heart Failure: XXIII. Critical Study of Methods for Determining the Cardiac Output in Patients with Cardiac Disease. A. Grollman, B. Friedman, G. Clark and T. R. Harrison, Nashville, Tenn.—p. 751.
Physiologic Disturbances During Experimental Diphtheritic Intoxication: I. Blood Sugar, Lactic Acid and Nonprotein and Amino-Acid Nitrogen. H. Yannet and D. C. Darrow, New Haven, Conn.—p. 767.
Id.: II. Hepatic Glycogenesis and Glycogen Concentration of Cardiac and Skeletal Muscle. H. Yannet and D. C. Darrow, New Haven, Conn.—p. 779.
Id.: III. Respiratory Quotients and Metabolic Rate. H. Yannet and W. Goldfarb, New Haven, Conn.—p. 787.
Studies of Total Pulmonary Capacity and Its Subdivisions: I. Normal, Absolute and Relative Values. A. Hurtado and C. Boller, Rochester, N. Y.—p. 793.
Id.: II. Correlation with Physical and Radiologic Measurements. A. Hurtado and W. W. Fray, Rochester, N. Y.—p. 807.
Id.: III. Changes with Body Posture. A. Hurtado and W. W. Fray, Rochester, N. Y.—p. 825.
Id.: IV. Preliminary Observations on Cases of Pulmonary Emphysema and of Pneumonoconiosis. A. Hurtado, W. W. Fray and W. S. McCann, Rochester, N. Y.—p. 833.
*Effect of Digitalis on Venous Pressure of Normal Individuals. D. A. Rytand, San Francisco.—p. 847.
*Comparison of Creatinine and Urea Clearance Tests of Kidney Function. J. M. Hayman, Jr., J. A. Halsted and L. E. Seyler, Cleveland.—p. 861.
Experiments on Relation of Creatinine and Urea Clearance Tests of Kidney Function and the Number of Glomeruli in the Human Kidney Obtained at Autopsy. J. M. Hayman, Jr., and S. M. Johnston, Cleveland.—p. 877.
*Serum Treatment of Hemolytic Streptococcus Pneumonia. H. L. Amoss and E. B. Craven, Jr., Durham, N. C.—p. 885.
Cystine Content of Finger Nails in Pellagra. S. A. Payne and W. A. Perlzweig, Durham, N. C.—p. 899.
Production of Experimental Plaut-Vincent's Angina in the Dog. Helene Wallace, E. W. Wallace and O. H. Robertson, Chicago.—p. 909.
Effects of Alternate Suction and Pressure on Blood Flow to the Lower Extremities. E. M. Landis and J. H. Gibbon, Jr., Philadelphia.—p. 925.

Effect of Digitalis on Venous Pressure.—Rytand made thirty-seven control and eighty-two experimental observations on the venous pressure before and after the administration of digitalis (in single full doses) in nine trials on eight normal subjects. He found that, in normal human beings and dogs, digitalis causes a decreased cardiac output and a decreased venous pressure. The greatest effect occurs at about twenty-four to thirty-two hours after the administration of the drug, with a return to normal levels in from seventy-two to ninety-six hours. The observed changes support the hypothesis that digitalis owes its action to a peripheral effect, probably on the hepatic vein radicles, in reducing the return flow of the blood to the heart. The hypothesis that the digitalis action follows changes in cardiac tone is negatived by all available data. Digitalis bradycardia is not due to the fall of venous pressure. The slowing of the heart, by causing the normal increase in venous pressure, partially conceals the effect of digitalis in reducing the return flow of the blood to the heart.

Creatinine and Urea Clearance Tests.—In order to estimate the range of creatinine clearance in normal persons under conditions of hospital and private practice, Hayman and his associates performed fifty-nine clearance tests on fifty-nine apparently healthy persons. In forty-five, only a single test was made, and in fourteen, from two to twenty-one clearances were determined. The authors compared the creatinine and urea clearance tests in normal persons and in patients presenting a history of chronic interstitial nephritis. The mean creatinine clearance in the 130 observations of the fifty-nine normal subjects was 148 cc. per minute. The variability of the two tests from the mean normal was approximately the same. In patients presenting chronic interstitial nephritis, the creatinine and urea clearance tests are generally equally reduced in relation to the average normal. The authors were unable to demonstrate any practical advantage in the creatinine test to compensate for its greater technical difficulty.

Serum Treatment of Streptococcic Pneumonia.—Amoss and Craven report eight cases of β-hemolytic streptococcus pneumonia in which antistreptococcus serum was administered and all the patients recovered. Three of the four patients treated by intravenous and intramuscular injections of the serum developed streptococcic empyema. Instillation of the serum into the pleural cavity in two patients presenting effusion apparently prevented infection of the fluid in one, and in the other it cleared the infected fluid of organisms in forty-eight hours. Instillation of the serum into the pleural cavity in two patients having empyema cleared the fluid of the hemolytic streptococcus but not of the pneumococcus, group IV, which appeared simultaneously with the disappearance of the streptococci. The results of tests by precipitins, toxallergin neutralization and mouse protection tests suggest a rational immunologic basis for specific serum treatment.

Journal of Comparative Neurology, Philadelphia

58: 1-310 (Aug. 15) 1933

The Amphibian Forebrain: VI. Necturus. C. J. Herrick, Chicago.—p. 1.

The Epibranchial Placode of the Facial Nerve in Amblystoma Jeffersonianum. F. L. Landacre, Columbus, Ohio.—p. 289.

Journal of Immunology, Baltimore

25: 199-294 (Sept.) 1933

Test for Therapeutic Value of Antipneumococcus Serum. K. Goodner, New York.—p. 199.

Local Organ Hypersensitiveness: V. Fate of Antigen and Appearance of Antibodies During Development of Hypersensitiveness in Rabbit Eye. Beatrice Carrier Seegal, D. Seegal and Devorah Khorazo, New York.—p. 207.

Id.: VI. Indirect Method for Its Production in Rabbit Eye. Beatrice Carrier Seegal and D. Seegal, New York.—p. 221.

Studies on Trachoma: III. Susceptibility of Rhesus Monkeys to Conjunctival Infection by Bacteria Granulosis Under Various Experimental Conditions. C. Weiss, St. Louis.—p. 227.

Id.: IV. Direct Transmission of Human Trachomatous Lesions to Various Animals. C. Weiss, St. Louis.—p. 247.

Id.: V. Agglutinability of Bacteria Granulosis in Serums of Trachoma Patients. C. Weiss, with assistance of G. B. Bowers, St. Louis.—p. 259.

*Precipitin Reaction in Yellow Fever. T. P. Hughes, New York.—p. 275.

Precipitin Reaction in Yellow Fever.—According to Hughes, serums taken from monkeys recently recovered from severe yellow fever infections possess a precipitin capable of reacting with a precipitinogen that occurs in the blood of monkeys during the period of acute illness. This precipitinogen is not the virus of yellow fever but appears to be associated with a protein of the albumin fraction. Its concentration reflects the severity of illness. It disappears with recovery, after stimulating the formation of a precipitating antibody. This resulting precipitin is entirely independent of the protective antibody resulting from an infection. A similar precipitin occurs in the serum of human beings recently recovered from a severe yellow fever infection. This precipitin reacts with the precipitinogen occurring in the blood of monkeys during the acute phase of the fever.

Journal of Pediatrics, St. Louis

3: 407-538 (Sept.) 1933

Presidential Address: American Academy of Pediatrics. S. McC. Hamill, Philadelphia.—p. 407.

The Developmental Health Examination. T. W. Todd, Cleveland.—p. 415.

Measurement of Aberrant Developmental Growth: I. Management of Preadolescent Disturbance. T. T. Zuck, Cleveland.—p. 424.

Survey of One Hundred Cases of Congenital Syphilis Treated with Stovarsol (Acetarsone). H. A. Rosenbaum, Chicago.—p. 434.

*Congenital Osteosclerosis. G. E. Robertson, Brooklyn.—p. 439.

Production and Use of Soft Curd Milk. M. Morris and G. A. Richardson, San Francisco.—p. 449.

Postvaccinal Encephalitis. S. Newman, Danville, Va.—p. 461.

*Phrenic Nerve Paralysis in the New-Born, Associated with Duchenne-Erb's Paralysis. J. L. Stein, Brooklyn.—p. 471.

*Myelosarcomatosis. R. H. Kunstadter, Chicago.—p. 479.

Hypertrophic Pyloric Stenosis in Twins. A. E. Varden, San Bernardino, Calif.—p. 493.

Hypertelorism. A. Cowan and M. Silberman, Columbus, Ohio.—p. 498.

Brucella Abortus Infection in Early Infancy. M. M. Fliess, Clifton Forge, Va., and J. V. Jordan, Covington, Va.—p. 502.

Allergic Epilepsy. J. Klein, Chicago.—p. 505.

Use of Whole Citrated Blood Intramuscularly in a Measles Epidemic. R. M. Lord, Providence, R. I.—p. 509.

Congenital Osteosclerosis.—Robertson presents a typical case of congenital osteosclerosis in which the striking feature is the large amount of vitamin D which the child received. The idea that osteosclerosis may represent the extreme in the healing of a rachitic process has been advanced but is generally discounted, since rachitic changes have not been demonstrated in these cases. The administration of vitamin D may accelerate the progress of the condition. In this connection the chemistry of the blood is of interest. Two determinations of phosphorus gave low values and the second determination, after thirteen months without added vitamin D in the diet, gave a value suggestive of active rickets. The author refutes the possibility that changes of the bone in this condition are secondary to or simultaneous with changes of the bone marrow by the fact that fairly extensive osteosclerosis has been reported in adults without anemia and with no abnormality in the blood picture. The blood picture of the anemia of congenital osteosclerosis has many features in common with the blood picture of Cooley's erythroblastic anemia. In both there is a gradually increasing anemia in the face of evidence of intense stimulation of the bone marrow and regeneration, but in the former there is increased calcification and, in the latter, decreased calcification. The situation suggests the possibility that the two conditions may be closely related and that osteosclerosis may be secondary to osseous rarefaction. The author believes that, in Moore's adult case of sickle cell anemia, the skull showed the characteristics of the skulls described by Cooley, while the short bones showed osteosclerosis. An analysis would seem to indicate that intense stimulation of the bone marrow may cause rarefaction of the bone, that osteosclerosis may follow osseous rarefaction, that osteosclerosis may occur without demonstrable changes of the bone marrow, but that the weight of evidence favors the conception that sclerosis of the bone or petrifaction in congenital osteosclerosis is the primary condition and that changes affecting the bone marrow and the hematopoietic system are secondary.

Phrenic Nerve Paralysis.—A study by Stein of nine cases of phrenic nerve paralysis associated with Erb's paralysis discloses that the great majority of cases are on the right side. The prognosis is favorable as regards restoration of function in the early days of life but appears to be less so if treatment is delayed from two to three months. Even then the prognosis as to life is not unfavorable, as shown by the cases of Remé and Epstein. Paralysis of the phrenic nerve should be looked for in all cases of Erb's paralysis. The author suggests that, in view of Kofferath having been the first to describe the syndrome of Erb's paralysis with phrenic nerve paralysis, the name "Kofferath syndrome" be given to the condition.

Myelosarcomatosis.—Kunstadter reports the case of a child of 6½ in whom the essential features were multiple malignant tumors throughout the skeletal system, gastro-intestinal tract, kidneys, pancreas and dura mater, which histologically gave the appearance of undifferentiated myeloid tissue. The blood contained many atypical cells that resembled young lymphocytes but may have been myeloid in origin. The clinical and pathologic diagnosis in this case presented many difficulties. The appearance of multiple tumors in the skull, proptosis, roentgen evidence of rarefaction and destruction in the membranous and long bones, marked anemia, severe emaciation and cachexia suggested the possibility of generalized sarcomatosis (the primary focus unknown), chloroma, multiple myeloma, sympaticoblastoma of the Hutchinson type, generalized xanthomatosis (Christian's syndrome), lymphosarcoma, atypical leukemia and leukosarcomatosis. The author believes that this case falls into the group of "complicated leukemia" and appears to substantiate the blastomatous nature of certain forms of leukemia.

Journal of Urology, Baltimore

30: 271-380 (Sept.) 1933

Apotheosis of Urology. G. R. Livermore, Memphis, Tenn.—p. 271.

Bacillus Proteus Pyonephrosis with Blood Infection: Review of Literature and Report of Case with Operation and Recovery. D. W. MacKenzie and A. B. Hawthorne, Montreal.—p. 277.

Polycystic Disease in Premature Infant. H. G. Beeson, Philadelphia.—p. 285.

Typhoid Pyonephrosis: Report of Case. P. J. Kahle and H. T. Beacham, New Orleans.—p. 299.

Relative Activity of Various Portions of Excised Ureter of the Dog. P. P. T. Wu, Rochester, Minn.—p. 307.

*Pyo-Urachus: Report of Case. A. R. Stevens, New York.—p. 319.

Cryptorchidism: Treatment and Results in One Hundred Cases. V. S. Counseller, Rochester, Minn.—p. 327.

Anorchidism (Absence of the Testicle): Case Report. M. Thorek and P. Thorek, Chicago.—p. 345.

Perineal Testicle. M. Muschat, Philadelphia.—p. 353.

Primary Bladder Carcinoma Within the Scrotum. G. Carroll and R. G. Jacobs, St. Louis.—p. 357.

*Treatment of Urethral Strictures of Small Caliber by New Method: Preliminary Report. L. W. Riba and J. E. Sanner, Chicago.—p. 361.

Cutaneous Horns of the Penis. H. H. Goldstein, Elizabeth, N. J.—p. 367.

Plastic Operation on Penis: Case Report. L. L. Veseen and C. P. O'Neill, Chicago.—p. 375.

New Shield for Bakelite Sheath. M. A. Nicholson, Duluth, Minn.—p. 379.

Pyo-Urachus.—Stevens reports a case of pyo-urachus which differs from most instances of inflammation of the urachus in that: 1. There was no opening leading to the umbilicus or to the bladder. 2. The urachus had not retracted downward as usual but still remained attached to the umbilicus in adult life.

3. The urachus had remained patent at its upper portion, as proved by the islands of epithelium found, whereas it had apparently become merely a cord of smooth muscle and fibrous tissue at the lower end, with no sign of epithelium or of a lumen. 4. The inflammation was confined to the upper part of the urachal structure, with no involvement of the bladder end.

Treatment of Urethral Strictures.—Riba and Sanner feel that small caliber strictures can be enlarged easily with only one electrosection treatment; that is, the introduction of a special electro-urethrotome into any strictured urethra, provided a filiform bougie can be passed. The urethrotome carries a cutting loop, which may be expanded to a desired caliber just proximal to the stricture or strictures. The cutting current is then turned on and the urethrotome withdrawn. There is no shock or pain. There is no active hemorrhage following this operation. The authors do not recommend this procedure to displace the use of urethral sounds. They believe that the usual course of urethral dilatations may be materially shortened if the strictures of small caliber are sectioned first, and they have found that subsequent sounds may be passed readily and without apparent difficulty. There has not been any indication that more scar tissue is likely to form following an electro-urethrotomy. In cases of strictures and infiltrations of large caliber this procedure is of little value. In a patient who has a strictured urethra and for some reason or other (renal colic, hematuria or injuries) needs an immediate cystoscopy, they believe that this method of handling the stricture would be the procedure of choice. From an economic standpoint, many patients can be kept out of a charity-bed hospital or their hospital stay may be reduced to a minimum of a day or two.

Kentucky Medical Journal, Bowling Green

31: 395-458 (Sept.) 1933

Benign Tumors of the Bronchus, with Especial Reference to Early Diagnosis: Two Case Reports. P. A. Turner, Louisville.—p. 423.
Leukemia: Blood Picture. G. S. Bottorff, Louisville.—p. 427.
Id.: Its Etiology and Pathology. W. H. Allen, Louisville.—p. 430.
Id.: Clinical Picture of Leukemia. H. Mahaffey, Louisville.—p. 432.
Id.: Treatment of Leukemia. F. G. Speidel, Louisville.—p. 433.
Shall Medicine Become Socialized? O. P. Nuckols, Pineville.—p. 439.
Acute Intestinal Obstruction. C. Baron, Covington.—p. 441.
Rôle of the County Medical Society. M. A. Gilmore, Hopkinsville.—p. 445.
Childhood Tuberculosis. J. W. Bruce, Louisville.—p. 448.
Pellagra. J. H. Hendren, Pineville.—p. 455.

Michigan State M. Society Journal, Grand Rapids

32: 479-530 (Sept.) 1933

Heart Disease and Pregnancy. B. I. Johnstone, Detroit.—p. 479.
Review of Dietary Treatment of Psoriasis, Including Brief Discussion of Possible Endocrine Etiology. R. C. Jamieson, Detroit.—p. 486.
Six Centuries of Medical Progress in Sweden. B. H. Larsson, Detroit.—p. 490.
Recent Conceptions of Obesity. A. A. Wittenberg, Detroit.—p. 500.
Hemangiomyofibroma of the Uterus: Report of Case. J. Johns, Ionia.—p. 504.
Selective Type of Thoracoplastic Operation. W. A. Hudson, Detroit.—p. 506.

Minnesota Medicine, St. Paul

16: 555-608 (Sept.) 1933

The Menace of the Tuberculous Teacher. L. S. Jordan and K. B. Jordan, Granite Falls.—p. 555.
Adequate Therapy of Syphilis. S. E. Sweitzer, Minneapolis.—p. 557.
Occurrence of Tularemia in Minnesota in 1921: Report of Two Cases, One Fatal, with Necropsy Report. H. R. Hartman, D. C. Beaver, Rochester, and R. G. Green, Minneapolis.—p. 559.
High Carbohydrate Low Calory Diet in the Treatment of Diabetes Mellitus. B. A. Watson, Minneapolis.—p. 566.
General, Local, Spinal and Balanced Anesthesia. J. S. Lundy, Rochester.—p. 572.
*Roentgen Teatment of Plantar Warts. E. T. Leddy and E. Johnson, Rochester.—p. 574.

Roentgen Treatment of Plantar Warts.—Leddy and Johnson state that before roentgen treatment is given the superficial keratosic layers should be pared off. A small hole is punched in a piece of lead foil 1 mm. thick and enlarged to the size of the wart. The lead foil is strapped to the foot with adhesive tape; lead rubber is used to protect the outlying regions. A mechanical rectifier and Coolidge tube are used. Low voltages, 80 peak kilovolts and 100 peak kilovolts without filter, are most frequently employed; 100 peak kilovolts or 110 peak kilovolts are occasionally used with 2 mm. of aluminum filter, and 135 peak kilovolts with 4 mm. of aluminum filter for the rare, large, infiltrating lesions. The focal skin distance used is 9, 12 or 16 inches. The time is changed proportionately. The milliamperage employed is 5, 6 or 8. The total dose varies greatly from less than 0.7 to 5 skin erythema doses (192 to 1,848 roentgens). After the treatment is given, a pad is placed around the wart to relieve pressure. This pad is changed twice a week, and 20 per cent sulphonated bitumen in hydrous wool fat is often employed to keep the tissue soft. With lighter doses the treatment is repeated at intervals of one or two weeks for two or three times, but when the heavy doses are used the treatment is not repeated before two months, and then only once if indicated.

New England Journal of Medicine, Boston

209: 419-470 (Aug. 31) 1933

Fever Therapy and Other Recent Developments in Physical Therapy. W. H. Schmidt, Philadelphia.—p. 419.
Pneumonoconiosis: Importance of Accuracy in Roentgenologic Interpretation. H. K. Pancoast and E. P. Pendergrass, Philadelphia.—p. 425.
*Use of Surgical Diathermy (or Endothermy) in Separating Pleural Adhesions in Cases of Pulmonary Tuberculosis. G. L. Stivers, Worcester, Mass.—p. 437.
Résumé of Some Physiologic Reactions to High External Temperature. A. V. Bock and D. B. Dill, Boston.—p. 442.
Some Undesirable Tendencies in Using an Etiologic Classification of Heart Disease. H. A. Christian, Boston.—p. 444.
Pernicious Anemia: A Conditioned Deficiency: Observations on Effects of Administration of a Substance Rich in Vitamin B Complex. J. E. Connery and L. J. Goldwater, New York.—p. 446.

209: 471-518 (Sept. 7) 1933

Progress in the Study of Internal Secretions. J. C. Aub, Boston.—p. 471.
Present Status of Our Knowledge of Ovarian Hormones. H. S. Finkel, Boston.—p. 473.
Hyperparathyroidism: Its Diagnosis and Exclusion. F. Albright, Boston.—p. 476.
Certain Functions of the Adrenal Cortex. F. A. Hartman, Buffalo.—p. 480.
Present Status of Diseases of Hypophysis. T. J. Putnam, Boston.—p. 486.
Problem of Otitis Media and Mastoiditis in Scarlet Fever. J. I. Abrams, Boston, and S. Friedman, Providence, R. I.—p. 494.
Toxemia of Pregnancy: Treatment by Fluid Limitation and Dehydration. J. Lentine, Boston.—p. 500.

Treatment of Pulmonary Tuberculosis.—Stivers states that a complete collapse is obtained in approximately 10 per cent of all cases of pulmonary tuberculosis treated by artificial pneumothorax. In another 10 per cent a selective compression of the diseased areas gives satisfactory results. In the remaining 80 per cent, compression of the lung is ineffectual owing to pleural adhesions which hold the lung to the chest wall. It has been found that in many of these cases the operative procedure of intrapleural pneumolysis, or cutting of these adhesive bands, gives the desired collapse. The author is using a thoracoscope with the lens at an angle of 45 degrees, directed more toward the tip of the instrument. With his thoracolux the light can be guided to any part of the cavity in the chest and, in combination with the unlighted thoracoscope, can be used to determine the consistency of the bands. Two principal types are in use for severing the adhesions: the galvanocautery, a hot cutting point, and the endotherm, a cold coagulating and cutting electrode. The color of all adhesive bands is significant. In case an adhesion contains lung tissue it is preferable to coagulate an area around the insertion of the band on the chest wall at the first operation, and at a later operative date complete the cutting of the adhesion. In coagulating large adhesions it is advisable to use a comparatively weak current for a longer period rather than a stronger current for a brief time, for the latter current might occasion quick dehydration or even carbonization of the tissue. This would limit the field of desired coagulation and possibly be instrumental in the causation of secondary hemorrhage. The majority of adhesions are noted at the apexes, posteriorly or a few centimeters below this location, then at the posterior lateral wall, and last at the anterior wall. Occasionally a band holding the lung to the diaphragm is defined and is severed with difficulty, owing to the motion of the diaphragm. The stringlike fibrous band, the short thick fibrous band and the broad fan-shaped adhesion can be destroyed if they are not complicated by blood vessels, lung substance, caseous nodes or extension of the formation of a cavity into the band.

New York State Journal of Medicine, New York

33: 975-1024 (Aug. 15) 1933

Care of the Cancer Patient. D. Quick, New York.—p. 975.
Endocrinologic Problems in General Practice of Medicine. M. A. Goldzieher, Brooklyn.—p. 985.
Toxic Action of Metals in Alopecia Areata. C. N. Myers, B. Throne and J. Kingsbury, New York.—p. 991.
What the Orthopedist Can Do for the Arthritic. J. P. Stump, New York.—p. 998.
*Sulpharsphenamine in Vincent's Angina. H. J. Harris, Westport. —p. 1000.

Sulpharsphenamine in Vincent's Angina.—Harris states that in about 500 injections of sulpharsphenamine of various brands, given to patients with Vincent's angina during the 1932 epidemic, no noticeable reactions occurred except for an occasional patient who was actively nauseated or vomited during or immediately after the injection. Since reporting the series, the author has had five cases of toxicity and reactions, which he reports. These cases occurred within a few months, with the same technic and with various brands of sulpharsphenamine. In the many sporadic cases of a less severe and less infectious but of a stubborn nature that fail to respond to local measures such as potassium chlorate, sodium perborate and their flavored proprietary preparations, and since the disease may be so serious in some of its manifestations, the author has continued to use the intravenous injection of sulpharsphenamine mentioned in his original communications, realizing the possible reactions that might occur. It is unsafe to use this drug unless one is prepared to administer sodium thiosulphate intravenously at the first sign of a severe reaction or advancing arsenical dermatitis. With proper precautions, sulpharsphenamine can be used with reasonable safety in intractable cases of Vincent's angina, as in syphilis. It is essential to keep the patient under observation for at least fifteen minutes after the injection, to give sodium thiosulphate when indicated, and to be prepared for late reactions, such as dermatitis, which are successfully treated if seen at once.

Pennsylvania Medical Journal, Harrisburg

36: 895-1016 (Sept.) 1933

Intra-Ocular Tumors. B. Samuels, New York.—p. 895.
Successful Treatment of Hay Fever and Pollen Asthma. A. Sterling, Philadelphia.—p. 899.
Angina Pectoris: Its Possible Causes and Treatment. J. B. Wolffe, Philadelphia.—p. 901.
Compulsory Health Insurance. L. Lasday, Pittsburgh.—p. 904.
Responsibility in the Delinquent Child. D. G. Davidson, Philadelphia.—p. 908.
Rôle of the Family Doctor in the Cancer Problem. F. B. Utley, Pittsburgh.—p. 911.
Medical Aspects of Social Hygiene in Delaware County, Pennsylvania: Report of Study. T. Clark and Lida J. Usilton, Washington, D. C. —p. 914.
*Pituitary-Thyroid Syndrome Associated with Calcification of the Pituitary Body: Case Report. G. S. Enfield, Bedford, Pa.—p. 916.
Profit and Loss of Modern Medicine. V. P. Pisula, Everson, Pa.—p. 917.
Sclerema Neonatorum: Case with Recovery. G. J. Feldstein, Pittsburgh.—p. 921.
Medical History of Lehigh County. W. A. Hausman, Jr., Allentown, Pa.—p. 923.

Pituitary-Thyroid Syndrome.—Enfield reports calcification of the pituitary body in a Negro of 17 who complained of drowsiness noticed four years ago. This has continued and for the past four months the somnolence has been more pronounced. At times the patient noticed fulness and heaviness in the head and occasional blurring of vision. There was obstruction of the right nostril and a granular pharyngitis. The thyroid was readily palpated and gave a fibrous resistance. Examination showed the lungs and heart to be normal. Blood pressure was 90 systolic and 70 diastolic, with a pulse rate of 60. Ophthalmoscopic examination showed normal fundi with vision 5/15 in the right eye and 5/9 in the left. A roentgenogram of the skull showed the sella turcica to measure 14 by 6.5 mm. The sella was traversed by a calcified network and the clinoids were joined by a bony bridge. The basal metabolic rate was minus 17.8 per cent. The blood sugar was 97 mg. per hundred cubic centimeters, rose to 155 mg. in one hour and fifteen minutes after the ingestion of 150 Gm. of dextrose and returned to 105 mg. within two hours and fifteen minutes. No sugar was found in the urine. Urinalysis, tests of the renal function, blood counts, Wassermann reaction and the fluid intake and output were normal. Treatment consisted of thyroid extract 0.06 Gm. with pituitary substance 0.12 Gm. in a capsule three times a day. The patient was under observation for eight weeks and when last seen had been working as a stevedore, entirely free from drowsiness. Neither trauma nor tuberculoma seemed active.

Public Health Reports, Washington, D. C.

48: 1069-1094 (Sept. 1) 1933

Incidence of Endemic Goiter in Northeastern Germany: Note. R. Olesen.—p. 1074.
Technic for Routine and Experimental Feeding of Certain Ixodid Ticks on Guinea-Pigs and Rabbits. W. L. Jellison and C. B. Philip.—p. 1081.

48: 1095-1126 (Sept. 8) 1933

Comparability of Sickness Records of Public Utilities. D. K. Brundage. —p. 1095.
Effect of Calcium on Transplanted Mouse Tumors. M. J. Shear.—p. 1103.

Rhode Island Medical Journal, Providence

16: 129-144 (Sept.) 1933

Modern Ideas in Regard to Epilepsy. W. N. Hughes, Providence.—p. 129.
Congenital Dislocation of the Hip. J. Ridlon, Newport.—p. 135.

Surgery, Gynecology and Obstetrics, Chicago

57: 1-146 (July) 1933

Kidney Pelves: Normal Variations in Their Shape and Flow with Possible Pathologic Significance. D. K. Rose, W. G. Hamm, S. Moore and H. M. Wilson, St. Louis.—p. 1.
Protection of Peritoneum Against Infection. B. Steinberg, Toledo, Ohio, and H. Goldblatt, Cleveland.—p. 15.
Epitheliomas of Lower Rectum and Anus. T. S. Raiford, New York. —p. 21.
Detailed Studies of a Series of Gallbladder Cases. E. Andrews, Chicago. —p. 36.
Paravertebral Anesthesia in Obstetrics: Experimental and Clinical Basis. J. G. P. Cleland, Oregon City, Ore.—p. 51.
*Chemical Composition of Amniotic Fluid: Comparative Study of Human Amniotic Fluid and Maternal Blood. A. Cantarow, H. Stuckert and R. C. Davis, Philadelphia.—p. 63.
Nonspecific Granuloma of Gastro-Intestinal Tract. J. F. Erdmann and C. V. Burt, New York.—p. 71.
Studies on Tumor Metastasis: II. Distribution of Metastases in Cancer of the Breast. S. Warren and Eva M. Witham, Boston.—p. 81.
The Jianu Gastrostomy. G. T. Pack, New York.—p. 86.
The Transverse Incision in the Upper Abdomen. W. Bartlett and W. Bartlett, Jr., St. Louis.—p. 93.
*Dysfunctional Uterine Bleeding: Results in Treatment with Extracts of the Urine of Pregnant Women. G. Van S. Smith and J. Rock, Brookline, Mass.—p. 100.
Tumors of the Parotid Region: Studies of One Hundred and Thirty-Five Cases. J. McFarland, Philadelphia.—p. 104.
Surgical Treatment of Rectal Tuberculosis. W. A. Fansler and C. K. Petter, Minneapolis.—p. 115.
Treatment of Fractures of Outer End of Clavicle. A. H. Trynin, Brooklyn.—p. 118.

Chemical Composition of Amniotic Fluid.—Cantarow and his associates made chemical studies of amniotic fluid and maternal blood obtained simultaneously from thirty-six women in the seventh to the ninth months of normal pregnancy. The protein content of the maternal serum ranged from 4.07 to 7.5 Gm. per hundred cubic centimeters. That of the amniotic fluid varied from 0 to 1.5 Gm., averaging 0.53 Gm. per hundred cubic centimeters. The nonprotein nitrogen content of the maternal blood ranged from 13.76 to 36 mg., averaging 23.98 mg. per cent and being definitely lower than the reported values for normal nonpregnant women. The nonprotein nitrogen concentration of the amniotic fluid varied from 13.6 to 37.5 mg., averaging 24.25 mg. and being higher than the corresponding maternal blood values in fifteen and lower in twenty instances. The uric acid content of the maternal blood ranged from 1.6 to 4.6 mg., averaging 3.05 mg. per hundred cubic centimeters. That of the amniotic fluid varied from 2.06 to 8.96 mg., averaging 4.54 mg. per hundred cubic centimeters and exceeding the uric acid concentration of the maternal blood in thirty-one cases. The sugar concentration of the blood ranged from 48 to 108 mg., averaging 84 mg. per hundred cubic centimeters. The sugar content of the amniotic fluid varied from 0 to 59 mg., averaging 19 mg. per cent. The calcium content of the maternal serum ranged from 8.2 to 12.5 mg., averaging 9.82 mg.; that of the amniotic fluid varied from 3.26 to 7.84 mg. per cent, averaging 5.46 mg. The inorganic phosphorus content of the maternal serum ranged from 3.5 to 5.7 mg., averaging 4.3 mg. per hundred cubic centimeters. The values for amniotic fluid phosphorus varied from 1.2 to 5.4 mg., averaging 3.1 mg., and

exceeded the phosphorus concentration of the serum in four instances. The authors compare these data with corresponding observations on cerebrospinal fluid and transudates and believe that the amniotic fluid cannot be regarded as a pure dialysate of maternal blood plasma.

Dysfunctional Uterine Bleeding.—Smith and Rock treated twenty-four patients who complained of menorrhagia and thirty-six who complained of metrorrhagia with antuitrin S. The optimal dosage in this group was from 20 to 40 cc. of antuitrin S given in amounts of from 3 to 10 cc. over a period of from three to ten days. Twenty-eight patients were cured, twenty-two were relieved and six were not benefited. The cessation of bleeding accompanied treatment so often and in many cases so rapidly as to leave little doubt of the specificity of the hormone, especially when the variable potency of the preparations was considered. A limited number of laboratory observations have suggested a clue concerning the mechanism of the therapeutic action of this hormone, i. e., the possibility of a direct action on a hypophyseal hormone.

Texas State Journal of Medicine, Fort Worth

29: 295-356 (Sept.) 1933

Intestinal Diverticulosis and Diverticulitis. G. D. Carlson, Dallas.—p. 299.
Fluid Levels as an Aid to Diagnosis in Acute Abdominal Conditions. T. A. Pressly, San Antonio.—p. 305.
*Pancreatic Extract in Treatment of Angina Pectoris. G. Milliken, Houston.—p. 307.
Radiation Therapy in Inflammatory Processes. C. A. Wilcox, Wichita Falls.—p. 310.
*Intestinal Tract as Source of Etiologic Factors in (Essential) Hypertension: Preliminary Report. J. E. Johnson, Mineral Wells.—p. 313.
Thymic Disease. E. D. Crutchfield, San Antonio.—p. 318.
Multiplicity of Factors in Etiology of Asthma and Hay Fever. B. Swinny, San Antonio.—p. 321.
Five Year Report on Use of Surgery and Radium in Treatment of Severe Leukomas of Cornea. H. L. Hilgartner and H. L. Hilgartner, Jr., Austin.—p. 325.
Histopathology of Nonspecific Sinusitis. W. A. Wagner, New Orleans.—p. 329.
Myasthenia Gravis: Report of Fatal Case. O. E. Clements, Gainesville.—p. 337.
Treatment of Hemorrhoids with Injection and Surgery. H. T. Hayes, Houston.—p. 340.

Pancreatic Extract in Treatment of Angina Pectoris.—Milliken calls special attention to the use of an insulin-free pancreatic extract in the treatment of angina pectoris. It is so diluted that in biologic assay 0.1 cc. neutralizes 1 microgram of epinephrine or the amount of antiepinephrine necessary to counteract 0.001 mg. of epinephrine. This is termed one unit. Pancreatic extract has been used in forty cases of angina pectoris. The author has used it in seven additional cases. In the forty-seven cases, the extract was found to be of no benefit in 12.76 per cent; 27.65 per cent showed moderate benefit, and marked benefit was obtained in 59.67 per cent of the patients treated by the intramuscular injection of the substance. The amount of extract required to give relief is not constant but gives a fairly clear idea of the severity of the angina: mild cases require from 120 to 740 units to obtain relief, while the more severe cases may require as many as 5,000 units. The best plan of treatment has been daily injections of from 60 to 120 units of the extract for a period of ten days. Then if the symptoms have been relieved, the time interval is extended between doses for from one to two days. The extract is used until the patient remains free from all symptoms for a period of six months.

Hypertension and Intestinal Toxemia.—Johnson cites his experience with five carefully selected and closely observed cases of early essential hypertension over an average period of two years. He observed that intestinal toxemia is associated with all cases. Treatment that relieves the toxemia reduces the blood pressure. The pressure rises again shortly if the toxemia is allowed to return, and is again lowered with the restoration of normal intestinal elimination. A reasonable level of pressure can be maintained, perhaps indefinitely, provided the patient is kept free from toxemia and from emotional stresses. The importance of the establishment of intestinal toxemia as an etiologic factor in hypertension lies not so much in the possibility of the cure of the cases already established as it does in prospects of prophylaxis against the development of this malady in predisposed persons.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

30: 163-248 (July-Sept.) 1933

Celiac Disease. R. E. Steen.—p. 163.
Lichen Urticatus or Urticaria Papulosa. G. W. Bray.—p. 180.
*Rare Primary Osseous Dystrophy. P. Ellman.—p. 188.
Deafness Due to Rickets: Case. M. Yearsley.—p. 194.
*Hemolytic Streptococcic Meningitis, with Recovery: Case. Hildreth Rockett.—p. 196.

Rare Primary Osseous Dystrophy.—Ellman presents a case of unusual type of primary bone dystrophy, with secondary manifestations in the joints mainly of the toxic or so-called rheumatoid type of arthritis. A careful search of the literature shows reports of an almost identical condition described in two cases by Morquio and in one by Meyer and Brennermann. As in Morquio's cases there was a history of the parents being first cousins. Because the author's patient is an only child, the familial tendency cannot be confirmed. The gross deformity of the body and the points of resemblance of other parts of the skeleton point to the condition being a clinical entity that is distinctive and almost identical with the cases of Morquio and Meyer and Brennermann. The underlying pathogenesis is not easy to explain. The parents of the patient were first cousins, and the lower blood calcium, blood phosphorus and blood phosphatase is undoubtedly an important factor in what Morquio described as a serious disturbance of osteogenesis. The question of an endocrinal change (parathyroids?) being the primary factor has to be considered. The essential feature of generalized bony decalcification points to the possibility of a congenital metabolic disturbance. While the mother is convinced that the condition followed measles, it is more likely, from the history, that measles aggravated the already existing changes in the skeleton, bringing the condition more vividly to her notice.

Hemolytic Streptococcic Meningitis.—Rockett reports the case of a boy, aged 2½ years, who was admitted to the hospital with whooping cough and bronchopneumonia. The temperature dropped to 99 F. and remained at or near this level for the next fortnight. During this period the patient's general condition was poor; he coughed, whooped and vomited at fairly frequent intervals, and the lungs showed signs of extensive bronchitis. Twenty-two days after admission the temperature commenced to rise, reaching 103 F. the following day. In the absence of any other clinical manifestations, apart from bronchitis, it was assumed that the rise of temperature with accompanying increase of pulse and respiration rates was indicative of a recrudescence of bronchopneumonia. Three days later, rigidity of the neck was first observed. There was no retraction of the head, and Kernig's sign was negative. On otologic examination, both tympanic membranes were found to be normal. On lumbar puncture, turbid fluid under slightly increased pressure was obtained. Both direct smear and culture gave a negative result. From the fluid obtained on the following day a profuse growth of hemolytic streptococcus in pure culture was grown. Treatment by antiscarlatinal serum intrathecally and intramuscularly was immediately begun. Intravenous administration of serum was found to be impracticable without cutting down on a vein. Recovery was considerably retarded by severe paroxysms of whooping cough, during which suffocation frequently appeared imminent.

British Journal of Dermatology and Syphilis, London

45: 333-384 (Aug.-Sept.) 1933

*Further Observations on Autohemotherapy. N. Burgess.—p. 333.
Multiple Gangrene of the Skin: Report of Three Cases. J. H. T. Davies.—p. 341.
Keratosis Punctata at an Unusual Site (Naevus Unius Lateris). J. Beatty.—p. 346.

Autohemotherapy.—Burgess used autohemotherapy in cases of psoriasis, eczema, varicose dermatitis with sensitization rash, chronic urticaria, toxic erythema, furunculosis, idiopathic generalized pruritus and Besnier's prurigo. Acute psoriasis was cured or greatly improved within two months. One case cleared up within four weeks. The subacute and chronic cases were less satisfactory, half the cases being improved, but the rest did not benefit from the treatment. All patients were treated

locally with 2 per cent ammonium hydrophosphite and salicylic acid in zinc paste. Consistently good results were obtained in cases of varicose dermatitis of the leg in which a generalized sensitization eruption had occurred; all the patients treated were known to be cured with the exception of three who ceased to attend. In one case the sensitization eruption, which had been present for several months, disappeared in ten days, only two injections being given. The sensitization rash usually disappears after two or three injections, but in most cases the original patch of varicose dermatitis remains unaltered. Eczema failed to improve in 60 per cent of the cases as a result of autohemotherapy, but the remainder were cured or greatly improved. The sensitization eruption occurring in the course of varicose dermatitis treated by autohemotherapy gave the most satisfactory results. Five cases of chronic urticaria were treated, of which two were improved. Three cases of toxic erythema were treated and cured. Three cases of furunculosis cleared up after treatment, but a case of idiopathic pruritus failed to respond. In cases of Besnier's prurigo temporary improvement with a diminution of the irritation takes place, but there is no alteration in the appearance of the eruption. Treatment with intradermal injections of autoserum in a few cases of acute psoriasis, nummular eczema and angioneurotic edema was not as beneficial as autohemotherapy. The patients who were relieved by autohemotherapy and autoserotherapy gave positive skin reactions to their proteoses, while after successful treatment the skin reactions were negative. Those not relieved had either given negative reactions before treatment or continued to give positive reactions after treatment. The author suggests that it is possible that the blood in these patients contains antigens and that the injection of blood or serum leads to desensitization.

British Journal of Ophthalmology, London

17: 513-576 (Sept.) 1933

Herpes Zoster Ophthalmicus. J. H. Doggart.—p. 513.
Angiogliomatosis Retinae with Pathologic Report: Case. T. A. Carr and H. B. Stallard.—p. 525.
Microscopic Appearances of Corneal Grafts. J. W. T. Thomas.—p. 529.
Results of Intranasal Dacryocystorhinostomy. L. M. J. Henry.—p. 550.
Hand Slit Lamp. N. B. Harman.—p. 552.
New Slit Lamp. E. G. Mackie.—p. 554.

British Journal of Radiology, London

6: 449-512 (Aug.) 1933

Variations in Response of Tumors to Sublethal and Lethal Doses of X-Rays. S. Russ and G. M. Scott.—p. 451.
Effect of Gamma Rays on Metabolism of Tissues in Culture. Barbara E. Holmes.—p. 461.
*Metastases in Breast Cancer: Problem of Prevention. F. Hernaman-Johnson.—p. 468.

Metastases in Breast Cancer.—Hernaman-Johnson says that metastases may arise from cells which have escaped operative removal or death by radium; or they may be already present in embryo in the spine or elsewhere at the time of operation. It is not possible to kill all malignant cells, widely scattered as they may be, by any form of radiation; but suitably applied roentgen treatment will help to stimulate the body itself to deal with them. The fact that the method of attack is indirect makes it imperative that the response of the body tissues should not be exhausted; hence one should not aim at doing everything by a single course of treatment but should give treatment from time to time over a period of years. Agents that act solely by affecting the body as a whole should not be neglected. Of these, ultraviolet radiation is of proved value, but all measures that provide mental and physical health are of importance, and the general effect of roentgen rays themselves must not be left out of account. Radiation therapy, however modified and improved, may never be an ideal weapon against metastases. But at least its possibilities in this direction should be fully explored, as, at the moment, it is the only line of treatment that holds out any hope of lessening the death rate from this cause.

East African Medical Journal, Nairobi

10: 129-158 (Aug.) 1933

Growth of Public Health Service in a Tropical Town. R. R. Scott.—p. 130.
Toxic Albuminuria of Pregnancy in a Muganda: Case. Margaret Holliday.—p. 149.

Edinburgh Medical Journal

40: 365-400 (Aug.) 1933

Clinical Studies in Pathology of Bone. D. M. Greig.—p. 365.
Evolution of Ideas Regarding Disease. J. D. Comrie.—p. 369.
Isolated Fracture of the Lunate Bone. G. I. Boyd.—p. 385.

Glasgow Medical Journal

2: 41-72 (Aug.) 1933

Crossed Renal Dystopia: Case. A. Jacobs.—p. 41.
*Purulent Meningitis with Recovery: Case Presenting Certain Resemblances to Meningitic Form of Poliomyelitis. J. N. Cruickshank.—p. 44.

Purulent Meningitis with Recovery.—Cruickshank reports a case of meningitis that occurred in a healthy young man eight months after an attack of influenza. The cerebrospinal fluid was frankly purulent, containing large numbers of polymorphonuclears, but no organisms could be found either by direct examination or on culture. There was no focus of infection in the ear or nasopharynx. After an irregular fever lasting about two weeks, the illness ended in complete recovery. The author discusses the diagnosis with particular reference to the possibility of the meningitic form of poliomyelitis and concludes that the case was one of purulent meningitis of unknown origin. All cases of so-called benign purulent meningitis and cases of incompletely developed abortive or meningitic poliomyelitis should be observed carefully in the convalescent stages for evidence of paralysis or dementia paralytica and should be studied from the epidemiologic aspect. When there is no definite evidence of the infection having been due to the virus of poliomyelitis, it does not seem justifiable to make any more exact diagnosis than one of purulent meningitis of unknown origin. The objectionable term "aseptic meningitis" is best avoided.

Indian Medical Gazette, Calcutta

68: 425-484 (Aug.) 1933

*Atebrin in Treatment of Indian Strains of Malaria. R. N. Chopra, B. M. Das Gupta and B. Sen.—p. 425.
*Tropical Typhus Serologically Related to Scrub Typhus of Federated Malay States. C. de C. Martin and L. A. P. Anderson.—p. 432.
Rôle of Eosinophils in Diagnosis of Spasmodic Asthma. H. W. Acton and Dharmendra.—p. 436.
Diabetes in Children. J. P. Bose.—p. 443.
Schematic Representation of Variants of Cholera Vibrio Produced Under Influence of Bacteriophage. C. L. Pasricha, A. J. de Monte and S. K. Gupta.—p. 448.
Experimental Studies with Spirillum Found in Nasal Cavity of Some Lepers. B. M. Das Gupta and S. N. Chatterjee.—p. 453.
Cancrum Oris in Monkey Infected with Leishmania Donovani. R. O. A. Smith.—p. 455.
Vincent's Disease in a Macaca Irus Monkey. K. V. Krishnan.—p. 455.
Filtrable Phase of Tubercle Bacillus. M. B. Soparkar and C. S. Dhilon.—p. 456.
Constancy of Sugar-Chloride Relationship in Diabetic Urines. K. N. Bagchi.—p. 457.
Gavano: New Specific for Amebic Dysentery. G. H. Fitzgerald.—p. 458.

Treatment of Malaria.—From a study of thirty-eight cases of malaria treated with atebrin (an amino-acridine derivative), Chopra and his associates draw the following conclusions: 1. Atebrin is an effective drug in the treatment of Indian strains of malaria. Its destructive action on the asexual forms of benign tertian, malignant tertian and quartan types of malaria is about equal, and the schizonts disappear from the peripheral circulation after the administration of three tablets of 0.1 Gm. for two or three days. 2. The sexual forms or gametocytes are more slowly acted on than the asexual forms. The gametocytes of the benign tertian and quartan types are readily destroyed and degenerative changes can be observed in them shortly after the administration of the drug is started. The gametocytes of the malignant tertian type are not touched at all. 3. The drug is effective in doses of 0.1 Gm. three times a day, for five days. In the majority of cases such a course is effective, but in some cases it may have to be repeated after an interval of a few days. The drug can also be effectively given intravenously in doses of 0.1 Gm. dissolved in from 1 to 2 cc. of distilled water when the number of parasites in the peripheral blood is large. 4. In chronic types of malaria the drug is effective and produces a rapid reduction in the size of the spleen. 5. It is reported to prevent relapses, but the evidence at the authors' disposal shows that this is not the

case with Indian strains of malaria. Its prophylactic value is similar to that of the cinchona alkaloids. 6. In blackwater fever and in patients in whom the administration of quinine produces hemoglobinuria, atebrin can be safely given. 7. The blood pressure is lowered in some patients during the administration of the drug, but in the majority there is no effect. The pulse rate and respiration are not markedly affected. It has been used for patients suffering from endocarditis and myocarditis without ill effects. 8. The drug is largely excreted in the urine and can be readily detected. The excretion is not regular and goes on for three weeks or longer. There is a distinct tendency toward cumulative action of the drug. 9. It produces certain untoward effects, which are not serious. A profound feeling of general depression occurs in some patients. A slight yellow tinge of the skin and conjunctiva was observed particularly in those patients in whom excretion from the kidney is hindered for some reason. Slight epigastric pain, a feeling of uneasiness in the stomach, headache and loss of appetite and diarrhea sometimes occur when the drug is being administered. These as a rule stop when the drug is withheld. 10. The action of atebrin closely resembles that of the cinchona alkaloids, and the introduction of this drug is a distinct advance in the treatment of malarial fevers in India.

Tropical Typhus Related to Scrub Typhus.—Martin and Anderson describe a case of continued fever, contracted in Burma, exhibiting symptoms and signs suggestive of tropical typhus. Repeated Widal tests gave no evidence of infection by the enteric group, while the Weil-Felix test with proteus OX19 was persistently negative. The serum of the patient, taken on the eighteenth day of the illness, strongly agglutinated the Kingsbury strain of proteus, OXK, a strain of proteus which reacts specifically with the serum of cases of scrub typhus occurring in Malaya. Therefore the authors considered their case to be one of tropical typhus belonging to the same serologic variety of the typhus-like fevers as the K group, or scrub typhus. The clinical features of the case, with a history of a painful insect bite, and the later serologic observations strongly suggested to the authors that they were dealing with a variety of tick typhus, forming another of the rural group of typhus-like fevers, a group which includes tick typhus of India and scrub typhus of Malaya. So far as they are aware, this is the first occasion on which this variety of tropical typhus has been reported and demonstrated serologically. They suggest that the introduction and use of the Kingsbury strain of proteus, in addition to proteus X19 for the serologic diagnosis of typhus-like fevers, will probably show that there exist two groups of these fevers, one of which has heretofore remained undiagnosed by laboratory methods.

Journal of Laryngology and Otology, Edinburgh

48: 525-584 (Aug.) 1933

Treatment of Chronic Suppurative Otitis. T. R. Rodger.—p. 525.
Acusticus Tumor: Clinical and Pathologic Reports: Two Cases. A. A. Gray.—p. 535.

Journal of Tropical Medicine and Hygiene, London

36: 249-264 (Sept. 1) 1933

Further Observations on Micrococcus Myceticus and Micrococcus Metamyceticus. A. Castellani.—p. 249.
The Slaughter of Animals for Food. F. G. Cawston.—p. 251.
Symptomatology of Yaws in Liberia: Part III. Goundou and Gangosa. G. W. Harley.—p. 252.

Medical Journal of Australia, Sydney

2: 197-234 (Aug. 12) 1933

Cancer and Tuberculosis: VIII. Survey of Recent Work on Causation of Cancer. T. Cherry.—p. 197.
Importance of Early Treatment of Vascular Nevi. E. H. Molesworth.—p. 217.

South African Medical Journal, Cape Town

7: 489-524 (Aug. 12) 1933

National Health Insurance. A. W. Burton.—p. 491.

7: 525-560 (Aug. 26) 1933

Allergy: Definition and Scope of Allergy in Clinical Medicine. D. P. Marais.—p. 527.
The Nature of Allergy. L. Mirvish.—p. 531.
Treatment of Allergic Syndromes. J. D. M. Claassens.—p. 532.
The Nasopharyngeal Factor in Allergy. A. Smuts.—p. 537.

Tubercle, London

14: 481-528 (Aug.) 1933

After-Effects of Phrenicectomy. H. M. Davies.—p. 481.
Analysis of Immediate Results of Phrenic Evulsion or Phrenicectomy in Pulmonary Tuberculosis. H. E. Watson.—p. 489.
Id. D. W. F. Jones.—p. 491.
Morbid Anatomy and Histology of Asbestosis. S. R. Gloyne.—p. 493.
Some Clinical Types of Tuberculosis. L. S. T. Burrell.—p. 498.
Löwenstein's Technic of Cultivating Tubercle Bacillus from Blood Stream and from Other Infected Material. A. W. Smith.—p. 502.
*Studies on Immunity to Tuberculosis. H. S. Willis.—p. 506.

14: 529-576 (Sept.) 1933

Study of Differential Count and Sedimentation Test in Tuberculosis with Suggestion for an Index Figure Summing up Information Derived from Them. C. Frimodt-Möller and R. M. Barton.—p. 529.
Two Remarkable Cases of Large Pulmonary Cavities Closed by Surgical Methods. B. Hudson.—p. 548.
Morbid Anatomy and Histology of Asbestosis. S. R. Gloyne.—p. 550.

Immunity to Tuberculosis.—Willis studied, particularly on solid mediums, the effect of unheated rabbit blood on the growth of human and bovine tubercle bacilli. Rabbit's blood was obtained and incorporated into mediums by drawing 4 cc. of a 2.5 per cent solution of sodium citrate made from physiologic solution of sodium chloride (0.85 per cent) into a 25 cc. syringe, into which the blood was then aspirated directly from the heart to a total mixture of 20 cc. Blood thus obtained was added to warm glycerinated agar medium in the proportion of 1:2 (1.5 cc. of blood and 3 cc. of medium) and the mixture allowed to cool in a slant. Several lots of this medium were planted with human (H37) and a like number with bovine (B1 and B44) tubercle bacilli, along with equal numbers of tubes containing the same batch of medium to which no blood had been added. Also a few tubes of each were planted with avian tubercle bacilli. The cultures were observed at regular intervals of from five to eight days until growth was complete. This varied from three to six weeks. Both human and bovine tubercle bacilli grow luxuriantly in mediums to which citrated rabbit's blood has been added. The addition of this ingredient to mediums neither unduly stimulates the growth of bovine bacilli, which are pathogenic for rabbits, nor inhibits the growth of human bacilli to which rabbits are resistant. These types grow equally well on mediums prepared with rabbit's flesh instead of beef. When added to solid medium, sodium citrate stimulates moderately the growth of tubercle bacilli. Both human and bovine tubercle bacilli are carried over the rabbit's body after subcutaneous inoculation in the groin. Each is recoverable from the lungs and kidneys five days after inoculation.

Japanese Journal of Gastroenterology, Kyoto

5: 37-112 (July) 1933

*Influence of Intravenous and Subcutaneous Administration of Glucose on Secretion of Gastric Juice. M. Matsuyama.—p. 37.
Studies in Gastric Secretion, with Especial Reference to the Significance of the Appetite Juice. M. Matsuyama.—p. 48.
Experimental Studies in Sodium Chloride Metabolism: Report I. Influences of Injection of Bacteria and Colloid Substances on Sodium Chloride Metabolism. H. Saito.—p. 57.
Id.: Report II. Effect on Sodium Chloride Metabolism of Changing the Function of the Reticulo-Endothelial System by Blocking. H. Saito.—p. 67.
Id.: Report III. Relationship Between the Function of the Reticulo-Endothelial System and Retention of Sodium Chloride in the Tissues. H. Saito.—p. 72.

Influence of Dextrose on Gastric Juice.—The studies of Matsuyama bring out that, when dextrose is previously administered intravenously, the gastric secretion taking place on the intake of food is inhibited in human beings just as in dogs, but the degree of the inhibitory effect is not marked. When the solution of dextrose is previously injected subcutaneously, the gastric secretion taking place on the intake of food is conspicuously inhibited and sometimes suppressed. This inhibitory effect on the secretion is due not only to the rise in the level of the blood sugar but to the excitement of the centrifugal sensory nerves. Solution of dextrose, injected intravenously at the time when the gastric secretion on intake of food was taking place, exerts no inhibitory action on the gastric secretion. And, further, whatever the concentration of the solution of dextrose and whatever the amount of dextrose, the course of the gastric secretion is not affected.

Paris Médical

2: 341-376 (Nov. 4) 1933

Children's Diseases in 1933. P. Lereboullet and F. Saint Girons.—p. 341.
*Fetid Colic Syndrome in Children. P. Nobécourt.—p. 357.
Principles of Regulation of Cow's Milk Intended for Children. P. Lereboullet.—p. 361.
So-Called Bacillus Pfeiffer Meningitis. C. Cohen.—p. 368.
Modern Ideas on Pneumococcus Peritonitis in Children. J. Huber.—p. 371.

Fetid Colic Syndrome in Children.—Nobécourt describes the fetid colic syndrome that occurs in infants and children (rarely under 6 years of age) as a manifestation of abnormal putrefactive processes in the large intestine, which are favored by an abundance of insufficiently elaborated nitrogenous residues. A diet too rich in animal proteins and too poor in cereals, vegetables and fruits is usually the primary cause of the syndrome, but individual factors, such as dyspepsia, secretory disturbances of the gastro-intestinal tract and a neuro-arthritic disposition, may play an important part. The most characteristic symptom is the fetid odor of the stools. Evacuation of the bowels usually occurs only every other day or every third or fourth day. Careful examination of the feces may disclose small masses of coagulated mucus, but blood is absent. In many patients the constipation gives way from time to time to a diarrhea in which two or three stools may be passed daily, and this condition may last several days. The fetid odor is accentuated during the periods of diarrhea. The aspect of the abdomen is generally normal. Palpation may disclose a sensitivity in the region of the large intestine, the ileopelvic colon, the splenic angle of the colon or, more often, in the cecum. Modifications of the consistency and caliber of the colon are observed. Gastric succussion sounds and enlargement of the liver are frequently present. Symptoms of a hyposthenic gastric dyspepsia, often associated with the fetid colic syndrome, may be evidenced. Pallor, often cholemic, is observed. The children are generally thin, sad, apathetic and irritable, are easily fatigued and suffer from headaches. The evolution of the syndrome is essentially chronic, but acute exacerbations with fever may occur. The general symptoms often dominate the clinical picture and careful inquiry is necessary to reveal their cause. Treatment consists first of all in regulation of the diet. This comprises on the one hand the elimination or restriction of milk, meat and egg white with the substitution of buttermilk, yoghurt and kefir, and on the other hand the sole or predominant use of cereals, legumes rich in carbohydrates, and other vegetables and fruits. Medicinal treatment aiming at stimulating the digestive secretions, producing antisepsis of the large intestine, supplementing deficient digestive secretion and combating the constipation, the general weakness and so on, should be given according to the individual indications.

Presse Médicale, Paris

41: 1649-1664 (Oct. 25) 1933

*Combined Pyretotherapy and Chemotherapy in Primary and Secondary Syphilis. C. Richet, Jr., J. Dublineau and F. Joly.—p. 1649.

Combined Pyretotherapy and Chemotherapy in Syphilis.—Richet and his associates report clinical and experimental facts which seem to prove that pyretotherapy and chemotherapy combined can check a syphilitic infection more rapidly than chemotherapy alone. They obtained the cure of experimental syphilis in rabbits, which arsenotherapy alone (in the same doses) could not have produced and which pyretotherapy (of the same intensity) could not have obtained with constancy. In clinical practice the authors employed their treatment in thirty-seven cases of recent syphilis: five cases of primary and thirty-two cases of secondary syphilis. Each injection of antisyphilitic medication (given in the usual doses) was followed on the same day or several days later by the injection of a substance producing hyperthermia, usually Dmelcos' vaccine. The average hyperthermia of more than 39 C. in all patients totaled twenty-five hours for from eight to eighteen injections. The rapid disappearance of adenopathies and particularly of syphilids was noted. In some of the cases of primary syphilis the serum reactions became negative after five injections of antisyphilitic medication and in the thirty-two cases of secondary syphilis the serum reaction usually became negative after from eight to sixteen injections. The exact mechanism of this therapy is still obscure, but the demonstrated sensitivity of Spirochaeta pallida to heat is an important factor. In three patients presenting chancres, each of whom received an injection of an arsenic preparation followed two hours later by an injection of Dmelcos, Spirochaeta pallida had disappeared the next morning, while the spirochete could still be demonstrated in a control patient.

Policlinico, Rome

40: 1715-1754 (Oct. 30) 1933. Practical Section

*Diathermy in Treatment of Gangrenous Pulmonary Abscess. T. Lucherini.—p. 1715.
Calculous Bilateral Hydronephrosis. Pyelolithotomy and Nephrolithotomy. D. Lioy.—p. 1721.

Diathermy in Treatment of Pulmonary Abscess.—Lucherini employed the following technic in treating gangrenous abscesses of the lung: Two lead electrodes about 0.5 mm. in thickness, 18 cm. in width and 25 cm. in length are placed on the anterior and the posterior aspects of the side of the thorax corresponding to the seat of the pulmonary lesion, which is thus completely traversed by the diathermic current. The electrodes are fastened with large elastic bands and the patient is either half seated or lies prone. The intensity of the current varies according to the tolerance of the patient, generally from 1 to 1.5 amperes, and the duration of treatment is ten minutes for the first, twenty for the second and thirty for all succeeding treatments. One treatment is given every day. The author's patients received no supplementary treatment. The results proved satisfactory in all cases. The patients showed general improvement, increase of weight, disappearance of coughing, fever, pain, and hemoptysis, as well as diminution of the expectoration and of its fetid odor. Roentgenologic examination confirmed the improvement. The author maintains that by stimulating the blood and the lymphatic circulation and bringing energy into the tissues in the form of heat this method of treatment favors the resolution of the pathologic process, cleanses the focus of the disease and aids the recuperative powers of the tissues. The method is not advisable in acute forms of gangrenous abscess of the lung tending toward serious hemorrhages. The author believes that, even if the disease is not completely cured by this process, it improves the condition of the patient, reduces the extension of the gangrenous focus, renders the prognosis more favorable, stimulates the action of medical treatment and prepares the way for surgical intervention. The number of diathermic applications should correspond to the course of the disease and its symptomatology.

Semana Médica, Buenos Aires

40: 973-1048 (Oct. 5) 1933. Partial Index

Treatment of Cancer of the Tongue. R. C. Nicolini.—p. 973.
Tonsillectomy in Plaut-Vincent's Angina in Children. L. A. García and Y. Franchini.—p. 1000.
Surgical Therapy of Fibroma of Uterus Complicating Puerperium. T. A. Chamorro.—p. 1001.
*Glycemia in Pulmonary Tuberculosis. A. Dalto.—p. 1004.
Syphilitic Chancre of Gums of Extragenital Conjugal Origin: Case. M. I. Quiroga and A. Sicardi.—p. 1026.

Glycemia in Pulmonary Tuberculosis.—Dalto performed the provoked hyperglycemia test in fifty-six patients having various forms of pulmonary tuberculosis without hepatic complications. The determinations were made one-half hour, one hour and two hours after the oral administration of a 20 per cent solution of dextrose. The author concludes that in patients with grave febrile forms of pulmonary tuberculosis in evolution as well as in emaciated tuberculous patients there is hyperglycemia. In patients having stationary forms of pulmonary tuberculosis the glycemia is diminished but shows a tendency to become normal again. In patients suffering from subfebrile, sclerous forms of chronic evolution there is hypoglycemia and occasionally hyperglycemia. In patients whose tuberculous lesions follow a favorable course, with improvement of their general condition, glycemia is diminished during the first determinations of the test and then rises to normal values without exceeding them. The author's results agree with those generally reported in the literature. He considers the variations of both normal glycemia and provoked hyperglycemia, if not exactly an absolute mathematical criterion in the direct diag-

nosis and prognosis of pulmonary tuberculosis, at least a coadjutant element of great value in the indirect diagnosis and prognosis of the disease, as they are the manifestation of the profound changes which the carbohydrate metabolism suffers in those patients.

Dermatologische Wochenschrift, Leipzig

97: 1523-1550 (Oct. 28) 1933

Erosion of Skin Caused by Dichlorethylsulphide (War Gas). A. Matras. —p. 1523.

*Growth Inhibiting and Fungicidal Action of Various Chemicals on Epidermophyton Rubrum, Epidermophyton Interdigitale and Trichophyton Pedis A and B. Li Hsueh Yi.—p. 1526.

Antisyphilitic Treatment of Lesions Suspected of Being Primary Syphilitic Lesions Without Corroboration of Diagnoss by Demonstraton of Spirochetes? A. Musger.—p. 1532.

Fungicidal Action of Various Chemicals.—Li Hsueh Yi calls attention to the high incidence of fungous infections of the feet. He mentions Epidermophyton rubrum, Epidermophyton interdigitale and Trichophyton pedis A and B as the most frequent causes. He investigated the action of various chemicals in experiments in vitro and found that Castellani's fuchsin dye, thymol, benzoic acid and salicylic acid have a powerful growth-inhibiting as well as fungicidal action, and thus the experiments corroborate the favorable clinical action of these substances. Alcohol, mercurochrome, saturated carbolfuchsin, sodium thiosulphate, ethoxy-diamino-acridine lactate and hexylresorcinol in weak dilution are practically ineffective, and the author thinks that in view of these experimental results the clinical value of the latter group of preparations must be questioned. Resorcinol in a solution of from 1 to 3 per cent proved growth inhibiting toward Trichophyton and fungicidal against Epidermophyton interdigitale. Pure benzene and dioxyanthranol were growth inhibiting for all the fungi tested, except Epidermophyton interdigitale, but they were fungicidal only for the latter.

Klinische Wochenschrift, Berlin

12: 1633-1672 (Oct. 21) 1933

Bacteriology and Serology of Whooping Cough. M. Gundel and W. Schlüter.—p. 1633.

*Cooperation of Cells and of Colloid in Incretory Action of Thyroid. W. Grab.—p. 1637.

Eight-Year-Old Testicular Graft with Preserved Incretory Function. B. Romeis.—p. 1640.

*Rapid Diagnosis of Syphilitic Infection by Examination of Tonsillar Tissues. E. Hoffmann.—p. 1642.

Can Read's Formula Be Used as Substitute for Determination of Basal Metabolism? A. Böger and K. Voit.—p. 1642.

Acute Pulmonary Edema in Mitral Stenosis. K. Thums.—p. 1644.

Treatment of Heart Block and of Adams-Stokes Disease with Ephetonine. F. Seeber.—p. 1648.

Tubercle Bacillemia in Tuberculosis and in Rheumatism. H. Popper.—p. 1650.

Influence of Cephalin and of Heparin on Antibody Formation. K. Pelczar.—p. 1654.

Storage of Thorium Dioxide Preparation and Iron Metabolism. G. Barkan.—p. 1658.

Rôle of Prothrombin and Heparin in Proliferation and Differentiation of Tissues. Z. Zakrzewski.—p. 1658.

Results of Discussions of Committee of Experts on Public Hospitals, 1932. W. Hoffmann.—p. 1659.

Function of Cells and of Colloid in Thyroid.—On the basis of his studies, Grab states that the colloid of the thyroid stores the hormone of the thyroid. The hormone probably consists of thyroxine and of acid-soluble iodine fractions. The high concentration of hormone substances in the colloid is characteristic for the normal gland prepared for adequate functioning. The presence in the colloid of considerable amounts of acid-soluble iodine compounds and their secretion into the circulation during increased activity of the gland indicates that these fractions are of great physiologic significance for the function of the thyroid. The epithelial cells have an entirely different function from that of the colloid. These cells have to absorb the iodine-containing substances from the blood, transform and concentrate these substances and store them in the colloid until an adequate stimulus severs their adherence to the colloid and the hormone is secreted into the circulation. These functions apply only to the healthy, normally functioning thyroid and not to pathologic cases, for it has been proved that the great masses of colloid in colloid goiter contain only as much active hormone as a gland of normal size, but in a much lower concentration. The quantity of colloid and its susceptibility to stains are no measure of its functional significance. The author thinks that in pathologic cases the examination of the colloids as the product of cellular action presents a type of functional test of the cells that will point the way in the search for the origin of the pathologic mechanism. It is likely that studies on the quantity of colloid, its actual hormone content and its capacity to store hormone will add considerably to the understanding of the problems of goiter.

Rapid Diagnosis of New Syphilitic Infection.—Hoffmann takes smears from the tonsils by scraping them with a sharp curet or with a slightly bent spatula. The fine débris that contains epithelium as well as deeper tissues is crushed between the slide and the cover glas. The addition of physiologic solution of sodium chloride can usually be omitted. As a rule, a definite diagnosis should not be made unless the preparation contains only Spirochaeta pallida. However, an experienced person can make the diagnosis also if, besides Spirochaeta pallida, other strongly differing spirochetes are present. It is frequently possible to obtain pure preparations of Spirochaeta pallida by first wiping the tonsils with diluted alcohol and sodium chloride solution and, after that, scraping them with a sharp curet. Before placing the cover glass preparation under the microscope it should be sealed with wax. The examination of the specimen should be repeated one-half hour and several hours later, for the micro-organisms that at first were covered by detritus may appear later in the spaces only filled with fluid. The same applies also to preparations obtained from primary lesions, papules or lymphatic punctates. The author emphasizes that he has used this method successfully for many years not only in symptomless new cases but also in secondary syphilis with indistinct exanthems. The subsequent serologic tests, such as the Meinicke reaction, will generally corroborate the diagnosis, but in rare cases of secondary syphilis in which the seroreaction remains negative the demonstration of the spirochete may prove of great value. In cases in which this simple method is successful the puncture of lymph nodes may be dispensed with. In women and children who have no genital lesion, the tonsillar method is especially helpful. If the genitalia show a new primary lesion, material should also be obtained from the cervix or urethra.

Medizinische Klinik, Berlin

29: 1431-1462 (Oct. 20) 1933

Vasectomy as Method of Sterilization and Results of This Intervention. E. Wehner.—p. 1431.

Type, Genesis and Incidence of Injuries of Eyes in the New-Born. F. Schenk.—p. 1433.

Significance of Type Specific Propeptan Therapy in Nutritional Allergy. E. Urbach.—p. 1435.

*Value of Kaufmann's Water Test as Functional Test of Heart. O. Zimmermann.—p. 1437.

Case of So-Called Panagglutination. C. Riebeling.—p. 1440.

*Ambulatory Treatment of Contracted Flatfoot with Unpadded Plaster-of-Paris Cast According to Böhler. W. Schindler.—p. 1442.

Pathogenesis of Angina Pectoris Decubitalis. A. Lehndorff.—p. 1444.

Pseudomyxoma of Peritoneum Originating in Appendix. I. Muresan and F. Pirèe.—p. 1445.

Modification of Streptococcic Infection of White Mice by Gold. W. A. Collier.—p. 1447.

Surgical Treatment of Injuries of Hand and Fingers (with Exception of Bone Fractures). H. Schmorell.—p. 1449.

Treatment of Varicose Veins and Ulcers with Stocking Impregnated with Zinc Oxide. C. Fervers.—p. 1450.

Kauffmann's Water Test and Cardiac Function.—In testing the reliability of Kauffmann's water test, Zimmermann found that in patients with circulatory disturbances during slight cardiac decompensation the diuresis test is positive almost as often as it is negative, while in a number of patients without clinical signs of cardiac decompensation the test gave positive results. Moreover, the omission of the raising of the feet frequently did not alter the positive result. On the other hand, in persons in whom a negative result had been obtained with a raising of the feet, a subsequent test, in which the raising was omitted, frequently was positive. On the basis of these and other irregularities in the test, the author reaches the conclusion that Kauffmann's diuresis test cannot be relied on as a functional test of the circulation.

Ambulatory Treatment of Flatfoot.—On the basis of Böhler's theory that injured or inflamed limbs require complete and uninterrupted immobilization but that at the same

time the muscles should have free play, Schindler treated flatfoot of the muscular contraction type, in which freezing of the peroneus would ordinarily be resorted to, by means of Böhler's plaster-of-paris cast, which permits the patient to walk. He emphasizes that the cast should be as light as possible and that in the first few days circulatory disturbances, pain and inhibition of the movement of the toes should be watched for. The cast is left on for about six weeks, and during this time the patient is free from pain and can walk without difficulty. When the cast is removed, the foot is at once freely movable. That the unpadded plaster-of-paris cast is essential for the use of the member will be realized when it is compared with a padded cast. Apart from the much greater weight of the padded cast, the patient is never entirely free from pain while he wears it. Moreover, Böhler and many who have employed his method have always emphasized that with the unpadded bandage that permits the patient to walk there never develops a stiffening. By using the limb while it is fixed in the cast, the apparently paradoxical result is obtained that the muscles are frequently stronger after removal of the cast than they were before, because in using the member in the cast not only the body weight has to be borne but also the weight of the cast. The author employed the treatment with good results in fourteen cases. He admits that the treatment cannot always do away with more radical interventions, but in a large number of cases it gives satisfactory results without impairment of the working capacity. He thinks that even in flatfoot of the osseous contraction type that occurs in older persons a trial should be given to the ambulatory plaster-of-paris cast. This cast is not always satisfactory in infectious arthritis of the foot, but in combination with other methods it may eventually prove effective even in this condition.

Münchener medizinische Wochenschrift, Munich

80: 1649-1728 (Oct. 27) 1933. Partial Index

Problem of Parenchymatous Keratitis. K. Wessely.—p. 1673.
Transmission of Acute Anterior Poliomyelitis by Carriers. K. Kisskalt. —p. 1676.
Disturbances in Olfactory Sense. M. Nadoleczny.—p. 1676.
Main Causes of Injuries of Recurrent Nerve in Goiter Operations and Their Prevention. K. Schindler.—p. 1680.
Periodic Sterility in Women. H. Albrecht.—p. 1682.
*Why Does Body Posture Change During Pregnancy? G. A. Weltz.—p. 1686.
Reliability of Friedmann's Rapid Reaction for Diagnosis of Pregnancy. F. Hein.—p. 1687.
Case of Gangrenous Appendicitis in Paratyphoid Breslau. H. Müller. —p. 1688.
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How Should the Practitioner Treat Bone Fractures? F. Lange.—p. 1701.
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Diabetes Mellitus, Regeneration of Islands of Langerhans. A. Terbrüggen.—p. 1705.
First Aid and Treatment in Poisoning by Gases. H. Gebele.—p. 1710.
Treatment of Pulmonary Tuberculosis in Pregnant Women. W. R. Glaser.—p. 1712.

Change in Body Posture During Pregnancy.—Weltz shows that the change in the position of the center of gravity plays a minor part in the postural changes during pregnancy. In most cases, pregnancy is characterized by a stretching of the vertebral column. The decrease in the lumbar lordosis aims at an enlargement of the abdominal space, and the stretching of the thoracic vertebral column serves the enlargement or the preservation of the thoracic volume. If a shifting in the center of gravity were the dominating factor, an aggravation of the lumbar lordosis and of the thoracic kyphosis would be the result. However, the author admits certain exceptions to this rule. The aforementioned postural changes apply only to pregnant women who do not have a pendulous abdomen. If the abdominal walls are relaxed so that the abdomen protrudes far, there is neither a great pressure on the lumbar spine nor a considerable elevation of the diaphragm. In these cases, and only in these, the center of gravity is shifted greatly and must be compensated for by a backward placement of the thoracic vertebral column. Consequently there is not a stretching, but an increased kyphosis of the thoracic portion of the spine.

Wiener klinische Wochenschrift, Vienna

46: 1217-1248 (Oct. 13) 1933

*Treatment with Ultrashort Waves in Internal Medicine. E. Schliephake. p. 1217.
Development of Sella Turcica in Children Under Normal and Pathologic Conditions. W. Wieser.—p. 1220.
Internal Aspects of Boeck's Miliary Lupoid. A. Bergel and O. Scharff. —p. 1224.
*Investigations on Clinical and Biologic Significance of Argentaffine Cells of Gastro-Intestinal Tract: Action of Extract from Intestinal Mucous Membrane on Bartonella Anemia of Rats. G. Erös and S. Kunos.—p. 1227.
Galactose Test in Cirrhosis of Liver. E. Hermann.—p. 1230.
Pulmonary Hyperemia. M. Mastbaum and M. Winnikow.—p. 1231.
Local Tuberculin Reactions. E. Nobel.—p. 1233.
Clinical Aspects of Abdominal Disturbances of Circulatory Diseases. E. Lauda.—p. 1234.
Covered Perforation of Stomach and Penetrating Ulcer of Stomach and Duodenum. E. Ranzi.—p. 1238.

Ultrashort Wave Therapy.—Schliephake points out that, since ultrashort wave therapy aims at treating conservatively conditions that generally require surgical interventions, it deserves especial attention from internists. He reviews animal experiments that prove the selective action of certain wavelengths of the ultrashort type on tumor cells and on certain cells of the central nervous system. His practical therapeutic experiences with the ultrashort waves include 300 cases of furuncles, in which a cure was obtained in an average of about four and a halt days. Carbuncles and paronychia likewise were influenced favorably. However, of greater importance is the fact that ultrashort wave therapy is effective in pulmonary abscess, in pleural empyema and in osteomyelitis. In empyemas, wavelengths of 6 meters were much more effective than those of from 10 to 15 meters. Parodontitis was effectively treated with wavelengths of less than 6 meters, and granulomas were influenced best by a wavelength of 4 meters. Gynecologic disturbances that yielded to ultrashort wave therapy were pelviperitonitis and tumors of the adnexa. Angiospastic conditions were influenced, provided the vascular walls had not yet undergone noticeable changes. This was the case in incipient atherosclerotic gangrene and in angina pectoris. Some cases of migraine also were improved.

Argentaffine Cells of Intestinal Mucous Membrane.—Erös and Kunos continue Erös's report of studies on the significance of argentaffine cells in the gastric mucous membrane (first report abstracted in THE JOURNAL, November 11, p. 1597). They show that extract from the intestinal mucous membrane of animals that have been treated (left to starve) so as to effect an increase in the argentaffine cells has a therapeutic action on bartonella anemia in rats. The extract inhibits the further development of anemia and promotes hematopoiesis. It was surprising that these results were obtained with extremely small quantities. Larger doses were ineffective or even exerted an inhibiting action on the hematopoiesis. The hemograms of several patients having pernicious anemia were likewise favorably influenced by extracts prepared from the intestinal mucous membrane of starving chickens or hogs.

46: 1249-1280 (Oct. 20) 1933

Calcium Metabolism, Parathyroid Apparatus and Skeletal System. E. Gold.—p. 1249.
Modification of Blood Glycolysis by Cancer and Its Diagnostic Utilization. Cornelia Wetzler-Ligeti and R. Willheim.—p. 1252.
Photobiologic Sensibilization and Desensibilization in Ultraviolet Wavelengths and Their Relations to Photopathies. W. Hausmann.—p. 1257.
*Extragenital Metastases in Puerperal Sepsis. S. Stefancsik.—p. 1258.
*Fluctuations of Potassium and Calcium in Blood of Persons with Eczema and Dermatitis. G. I. Umansky and A. P. Stepanowa.—p. 1262.
Diseases of Lymph Nodes. H. Mautner.—p. 1265.
Division of Pulmonary Adhesions According to Jacobäus. A. V. Frisch.—p. 1265.
Pharmaceutic Preparations Influencing Vascular System. A. Fröhlich. —p. 1266.
In Defense of Preliminary Irradiation in Uterine Carcinoma. A. Mayer. —p. 1270.
Reply to Preceding Paper of Professor Mayer. S. Simon.—p. 1271.
When Should Colloidal Goiters Be Operated On? A. Eiselsberg.—p. 1272.
Erroneous Diagnoses Most Frequent in Cerebral Hemorrhages. H. Herschmann.—p. 1273.

Extragenital Metastases in Puerperal Sepsis.—According to Stefancsik the metastases of puerperal sepsis are of great significance, for they indicate a generalization of the infection. He discusses the development of metastases in

various parts of the body. The metastases of the lung and the liver predominated in the cases studied. The author states that in every case in which the diagnosis of puerperal sepsis has been made the patient should be examined daily in order to detect metastases that as yet do not cause complaints. He thinks that, since the complications are frequently fatal, care should be given to their prevention, and in this connection he directs attention to the ligation of the veins, a procedure that in recent years has been widely recommended.

Potassium and Calcium in Blood in Dermatitis.—Umansky and Stepanowa call attention to reports in the literature that indicate changes in the electrolyte content of the blood serum in different dermatologic disturbances. There are indications that between the potassium and the calcium ions in the blood there exists a certain relationship that exerts its influence on the skin. The authors report their studies on the potassium and calcium content of the blood of persons having acute eczema and dermatitis. First they determined the normal averages in healthy persons and then they made tests on three patients presenting acute eczema and on two having dermatitis. In each of these patients the potassium and calcium content of the blood were determined once at the height of the pathologic process, again when the weeping of the skin or the edema diminished, either spontaneously or as the result of treatment, and a third time after the complete disappearance of the skin disorder. It was found that, when the dermatitis or the acute eczema with edema are in the severest stage, there is always an increase in the potassium content of the blood and occasionally a decrease in the calcium content. As soon as the edema disappears, the ratio between the potassium and the calcium content of the blood becomes altered in that the potassium decreases and the calcium increases. Following the disappearance of the dermatitis and the acute eczema, the potassium and the calcium return to normal.

Zeitschrift f. Geburtshülfe u. Gynäkologie, Stuttgart

106: 285-440 (Oct. 13) 1933

Problem of Placement of Arm into Nape of Neck in Pelvic Presentation. L. Nürnberger.—p. 285.
Aborted Ovum, Aged 1 Month. P. Caffier.—p. 290.
Lumbago in Women and Bones of Pelvis. H. Jacobi.—p. 306.
*Coccyx as Obstacle to Delivery and Therapy of This Complication. K. Habbe.—p. 320
*Blood Pigment Metabolism in Gestation: Function of Liver During Pregnancy. G. Huwer.—p. 324.
Significance of Vaginal Flora in Gravidity for Course of Puerperium. H. Siebke and W. Horstmann.—p. 383.
Extraperitoneal Ligation of Hypogastric and Ovarian Arteries. W. Haupt.—p. 398.
Two Rare Malformations of Heart. H. Schwanen.—p. 416.
Modification of Ester of Cholesterol by Spinal Anesthesia, Ether Chloroform Anesthesia and Evipan. K. Fuge.—p. 429.

The Coccyx as an Obstacle to Delivery.—Habbe mentions four cases in which he recognized in time that the coccyx was an obstacle to delivery, but he dispensed with the operative removal and instead chose the nonsurgical removal of the obstacle. He fractured the projecting ankylosed coccyx in the course of the extraction by means of the forceps, and he never observed an injury to the child or a tearing of the soft tissues in the mother. In one instance, in which dislocation of the mobilized coccyx took place, the woman suffered from symptoms afterward, but these yielded to treatment. In all other cases, the coccyx healed so that the deviation disappeared. The author thinks that the obstructing coccyx can be removed, eventually, by introducing the hand into the rectum. He advises surgical removal only for cases in which other measures are unsuccessful.

Function of Liver During Pregnancy.—Huwer emphasizes that the normal blood status presents a constantly preserved equilibrium between erythropoiesis on the one hand and the physiologic decomposition of the erythrocytes, hemolysis, on the other. He thinks that the study of the various factors involved in the blood exchange will be an aid in the proper estimation of physiologic and pathologic processes of the blood and that it may be helpful in instituting rational therapeutic measures. Studies of the blood of pregnant women convinced the author that the quantity of blood increases toward the end of pregnancy. While in nonpregnant women the blood amounts to 6.95 per cent of the body weight, it amounts to 7.86 per cent at the end of pregnancy. The hemoglobin content in its relation to the body weight is, however, the same, for the increase in the quantity of blood involves only the plasma. Consequently the reduction in the percentage of hemoglobin and in the erythrocyte count, observed during pregnancy, is the result of the increase in plasma, representing a hydremia and only simulating an anemia. The color index remains the same as in nonpregnant women. The blood regeneration is greatly increased during the last weeks of pregnancy, but this increase corresponds to a greater decomposition of hemoglobin, which becomes evident in the elimination of urobilin and of other urinary pigments. The author emphasizes that it is incorrect to estimate the blood decomposition at the end of pregnancy on the basis of the bilirubin concentration of the blood, because the reduction in the albumin content of the blood of pregnant women creates conditions on the basis of which the concentration of the bilirubin is reduced. Studies of the hepatic function of pregnant women convinced the author that a urobilinuria, which could be considered as indicative of an impairment of the hepatic function, does not exist during pregnancy. Moreover, functional tests of the liver, which are based on the elimination capacity of this organ for dyestuffs, are unsuitable during pregnancy, because the albumin reduction of pregnancy has created entirely different conditions. These tests indicate the quantitative vehicle function of the serum protein bodies but not the elimination capacity of the liver.

Ugeskrift for Læger, Copenhagen

95: 1183-1206 (Nov.) 1933

*Trichlorethylene Intoxication in Industry. K. Roholm.—p. 1183.
*Clinical Contribution to Trichlorethylene Intoxication. T. Christiansen. —p. 1187.
*Chronic Septic Polyarthritis in Childhood with Eye Complications: Two Cases. A. Friedlænder.—p. 1190.

Trichlorethylene Intoxication in Industry.—Roholm reports four cases of acute trichlorethylene poisoning in Copenhagen factories in December, 1932. He states that other fatal cases have been reported since Stüber in 1931 collected 284 cases of trichlorethylene intoxication with twenty-five deaths. While resorption through the skin is possible, trichlorethylene enters the body mainly through inhalation of the vapors. Besides its narcotic effect, equaling that of chloroform and carbon tetrachloride, trichlorethylene exerts a specific intoxicating action on certain nerves of the brain, particularly the trigeminus. The chemical has an extensive application in industry as a cleanser for metal parts, a dry cleaning agent and a solvent for fats, tars, rubber and so on, and is also used in the treatment of trigeminal neuralgia. The author advises that the use of trichlorethylene be restricted so far as possible. It should be heated in tightly closed containers completely cooled before opening, and should not be used in small, poorly ventilated rooms.

Trichlorethylene Intoxication.—Christiansen's patient, a woman previously well, developed during the course of two months symptoms suggesting a disturbance of the upper respiratory passages. An accidental result in roentgen examination of the trachea showed an extensive pathologic process in the lungs resembling a miliary tuberculosis. Inhalation of a poisonous gas was denied, but finally it was found that on the day of onset of the symptoms the patient had worked for half an hour, vigorously cleaning a pair of shoes with trichlorethylene. Recovery occurred after about five months. The author states that this case clinically supplements the anatomopathologic picture of the lungs in the case of trichlorethylene intoxication described by Koch in 1931 and confirms Koch's assertion that trichlorethylene, in addition to its narcotic effect, has properties directly injurious to the lungs and, under certain circumstances, able to cause a lung involvement dominating the picture.

Chronic Polyarthritis in Childhood with Eye Complications.—Friedlænder calls attention to the fact that an iridocyclitis not only may occur in chronic septic conditions but may also, as in the first case, appear as the initial symptom of a grave general disturbance. The combination of chronic disease of the joints and iridocyclitis in the writer's cases presented such marked points of similarity to tuberculosis that correct diagnosis was not made until a late stage in the disease.

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RADIATION IN PRIMARY OPERABLE BREAST CANCER

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NEW YORK

Until very recently, general acceptance of irradiation in breast cancer has been limited to postoperative therapy and to the palliative care of inoperable, recurrent and metastatic growths. The only contact with the disease in its more favorable stages has been that following operation. It is even questionable whether this has been as altruistic as might seem on the surface. All too frequently the case is referred, following operation, for postoperative irradiation as a gesture and for diplomatic reasons. Unfortunately, the manner in which the postoperative therapy, at times, is given, may justify to some degree this view on the part of the surgeon. In only a limited way has there been a close cooperation between surgery and radiation therapy in the field of breast cancer. While it represents one of the largest groups of cancer, it has not generally received the cooperative effort between surgery and irradiation that has been noted in certain other cancer groups. As far as the operable material has been concerned, radiation therapy—when employed at all—has for the most part been started after surgery has been finished.

It would seem that there is now sufficient reliable published information and an accumulation of experience to warrant a reappraisal of the situation. What position does radiation therapy now hold in the treatment of primary operable cancer of the breast? How may it be improved within those limitations? And how may its usefulness be extended? Do the surgical results warrant a complete right of way for operative measures in the technically operable cases? Has radiation therapy enough to offer to justify giving it precedence at any time in this group of cases? Does the accumulated experience with radiation in general warrant taking a bold step into the semidarkness for the benefit of such a desperate disease?

While no such clear-cut definition of controllability by irradiation has been made in breast cancer as with the epidermoid carcinomas, it is my opinion that the accumulated experience is sufficient to warrant advancing of the status of irradiation in the breast group. It deserves initial consideration in the entire primary operable group—not in a competitive but in a cooperative way. It has sufficient to offer to warrant delay in operation for thorough preoperative irradiation. There is neither need nor justification, except in certain special cases, for operation the morning after the making of a positive clinical diagnosis. Strictly operable tumors in elderly persons may well be a problem for radiation therapy rather than for surgery. The same may be true for the very young. Advanced growths, still considered operable by many surgeons, will probably do better by irradiation than by surgery.

There is a surprising uniformity in the surgical statistics from large clinics on the three and five year results of surgical treatment alone. The cases without axillary node involvement show a five-year curability of from 70 to 75 per cent. Harrington's [1] series was 71.2 per cent, and this may be considered a fair average. This seems, at first, most reassuring, yet Portmann reports that 95 per cent of all patients coming to operation have axillary nodes involved. The same author reported from the compilation of a large series of statistics that the average length of life in breast cancer, untreated, is thirty-four months, and that the average curability after operation, in the entire operable group, is 38.6 per cent for the three-year and 28.8 per cent for the five-year period. Sampson Handley [2] states that 70 per cent of all patients coming to operation have intrathoracic involvement. After a most exhaustive study of the records of patients operated on at Johns Hopkins from 1889 to 1931, Dean Lewis [3] concluded that, while the results for the first five years are encouraging, nearly all die of cancer ultimately. He distinguishes between "clinical" cancer and cancer in the "pathologic" sense and urges the most extensive operation possible on the ground of avoiding local recurrence and hence prolonging life in comfort for a longer period. He bases the only possibility of preventing local recurrence on this wide removal, especially of skin.

When the evidence is carefully gone over, the fact remains that of all patients coming to operation at least 70 per cent are dead from extension of the disease at the end of five years and that the majority of the remaining 30 per cent die of cancer ultimately.

With the known and proved value of the physical agents in cancer, and in the face of such a gloomy picture from surgery alone, it seems evident that radiation therapy should be pressed more aggressively in the so-called operable stages of breast cancer rather than limited to the follow-up phase of therapy.

Unfortunately, the relative radiosensitivity between different types of breast cancer is not as well understood or apt to be as clearly defined as in epidermoid

Read before the Section on Radiology at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 16, 1933.

1. Harrington, S. W.: Carcinoma of the Breast, Surg., Gynec. & Obst. **56**: 438 (Feb. 15 [No. 2A]) 1933.

2. Handley, W. S.: The Place of Radium in the Treatment of Breast Cancer, Practitioner **125**: 453 (Oct.) 1930; Treatment of Breast Cancer, Lancet **1**: 986 (May 7) 1927; Cancer of the Breast, ed. 2, New York, Paul B. Hoeber, Inc., 1922.

3. Lewis, Dean, and Reinhoff, W. F., Jr.: A Study of the Results of Operation for the Cure of Cancer of the Breast, Ann. Surg. **95**: 336 (March) 1932.

carcinomas, especially those of the mouth and cervix uteri. There are differences between these groups and beyond the histology of the tumor itself. The complex breast structure affords a peculiar tumor bed. The amount of fat tissue in both breast and axilla is of little value in supporting an otherwise normal reaction to irradiation. The mode of dissemination of breast cancer, along multiple paths and through both lymphatics and blood vessels, discounts to some degree the value of local histologic appraisals. The variations between tumor grading and relative radiosensitivity are greater in the breast group than in most of the other major cancer groups. In spite of this, continued study, correlating the microscopic changes with the clinical reaction to irradiation, will go far toward pointing out those groups most amenable to radiation therapy. At present the differentiation rests largely on an anatomic basis—the gross extent of the disease.

In an appraisal of radiation in operable breast cancer, it must be considered (*a*) in conjunction with surgery and (*b*) as the sole means of treatment.

SURGERY COMBINED WITH RADIATION THERAPY

From the standpoint of conjunction with surgery, irradiation may be employed as a preliminary to operation, as an adjuvant following operation, or as an accessory aid—castration and total body irradiation—and at the time of operation.

1. *Postoperative Irradiation.*—It is in this form that irradiation is most generally accepted and employed. Recognition of its value is unanimous among radiologists and is gradually gaining favor with surgeons otherwise disinterested in radiation. A number of recent and excellent reports by radiologists give statistical proof of the value of this form of therapy. Evans and Leucutia [4] have reported on the five-year results in a series of 173 cases. Surgery and postoperative irradiation gave freedom from clinical evidence of disease of 76.4 per cent for three years and 70.5 per cent for five years, in cases without axillary node involvement. Their comparative surgical results were practically identical, and from this they inferred that postoperative irradiation in this group was probably of no value. The inference is perfectly logical, since the disease was strictly local and the therapy followed operation. Further reference, however, will be made to this point under preoperative irradiation. In their cases with axillary node involvement the curability with surgery and postoperative irradiation was decidedly better over a five-year period than in their surgical group alone. Their group of semiradical operative cases followed by irradiation gave better five-year results than radical operation with no irradiation. This is very interesting, but it is to be hoped that it will not be misleading. It is my opinion that surgery resorted to for direct attack on the disease ought to be as extensive as possible. There are indications for local surgery but under other circumstances, to be discussed later.

Portmann's results with postoperative irradiation give a five-year curability of 43 per cent, a gain of more than 10 per cent over his large compilation of results from surgery alone. It is interesting to note that this improvement in results (10 per cent) is approximately the same as attributed to the improvement in surgical results following Halstead's report in 1894 of the radical operation, which has since been the pattern for practically all extensive breast surgery.

The extensive and complete report by Pfahler [5] on more than 1,000 cases in various stages gives the best figures for a combined group, 46.6 per cent of freedom from evidence of disease at the end of five years. He concludes that this is a gain of 90 per cent as compared with surgery alone. The uniformity of these results by independent clinicians is impressive and cannot fail to carry conviction.

There is danger, however, in statistics in the present phase of the development of radiation therapy as far as breast work is concerned. Surgery of the breast has been practically standardized since Halstead's notable publication in 1894, and supplemented by his improvement in adding removal of the pectoralis minor muscle a couple of years later. The procedure has been universally followed and the intervening period of nearly forty years has given excellent opportunity for the collection of most valuable statistics. The review of the entire Johns Hopkins work, including the original work of Halstead, by Dean Lewis is one of the most valuable. Never again will there be a period in which such data will become available from a surgical point of view alone. Irradiation is now complicating this phase of the picture. The period in which all the surgical data have been accumulating is longer than the entire lifetime of radiation therapy. Accurate scientific irradiation is a matter of only a few years and technical improvement is more active now than at any time in the past. It must be remembered that five-year results reported today are the result of work that has become technically obsolete in the interim. The persistent queries of the critics of radiation therapy are not sufficient urge to rush toward premature publication where the results are steadily improving under advancing methods. The careful conscientious observations from day to day and from year to year of the most experienced radiologists are infinitely more valuable. If the opinions of such men are not respected, neither will their statistics be respected. Surgical statistics are different. They are backed by time, uniformity of technical procedure and a large volume of material from many sources. As it is, comparable statistics will be difficult to find when the time is ripe for comparison. Too little attention has been given to grouping on the basis of the anatomic extent of the disease. Subdivision of the cases on a gross clinical basis after the plans of Schmitz [6] or Steinthal is essential if statistical data are to be of real value ultimately.

The practical need among radiologists today, as far as actual postoperative irradiation is concerned, is not a question of the advisability of it; that is accepted. It is on the uniformity of technical procedure, the time to begin it, the intensity and quality of the irradiation, and the areas to be covered. I believe that maximum efficiency, within the limitation of postoperative irradiation, demands beginning treatment as soon as initial healing has taken place. The shortest wavelengths have proved so far to be the most effective in cancer therapy, and there is no logical reason why the breast should be an exception. The superficial character of the local field and the possibility of serious intrathoracic damage are not logical contraindications. The accessibility of

4. Evans, W. A., and Leucutia, Traian: Deep Roentgen-Ray Therapy of Mammary Cancer, Am. J. Roentgenol. **24**: 673 (Dec.) 1930.

5. Pfahler, G. E.: Results in Radiation Therapy in 1,022 Private Cases of Cancer of Breast, Am. J. Roentgenol. **27**: 497 (April) 1932.

6. Schmitz, Henry: Five-Year End Results in Carcinoma of the Breast, Radiology **13**: 392 (Nov.) 1929.

the local field should be rather a stimulus to greater filter and higher voltages than an excuse for using a less efficient type of irradiation. Finzi [7] has stated it admirably by suggesting that postoperative irradiation should be quite as aggressive as would be the case were a recurrence actually present. The suggestion of Luff [8] that radium is preferable for postoperative therapy is undoubtedly due to the fact that the intensity of his radium therapy was much greater than his treatment with x-rays.

The same might well apply to Sampson Handley's preference for radium needles postoperatively, since he admits that he uses very low voltage roentgen therapy. After a radical operation the various and widespread areas that Handley most fears are more accessible to external therapy and better adapted to roentgen irradiation than to radium. Much has been said about intrathoracic damage, and it does occur in certain individuals; whether or not there is a variable sensitivity is questionable. However, many of the reported instances of such damage, if followed for a time, would prove to be extension of the disease. In dealing with a lethal disease, too much caution is more dangerous than an aggressive policy. The skepticism and uncertainty of many German radiologists on the subject of postoperative irradiation is undoubtedly due to inadequate dosage following an overindulgence in massive single doses during the early days of high voltage roentgen therapy.

No blanket rule can govern the areas of greatest intensity in the postoperative cycle. This should be dependent on the observations made by the surgeon at the time of operation and on the location of the primary tumor in the breast. The entire area to be irradiated, however, should be very wide. Dean Lewis has stated that the possibility of reducing local recurrence is dependent alone on the widest possible excision of skin. In my opinion and experience, wide and intensive roentgen irradiation will carry this needed insurance far beyond the borders of the most radical surgical sacrifice of skin, and very effectively. A very pertinent observation has been made by Harrington. He is not in favor of postoperative irradiation as a routine but advises it in cases of high malignancy. This is valuable in that it draws particular attention to the urgent need of extra help in such cases. If one may draw even a partial parallel with certain other tumors in the body, rated as highly malignant on a tumor-grading basis, it might even suggest the probability of accomplishing relatively more in this type, as far as the local and regional areas of possible involvement are concerned. The real danger, however, is from distant involvement, and it at once raises the question of the advisability of preoperative irradiation as an additional safeguard.

As to the time in which postoperative irradiation should be completed, individual operators have many and varied plans. It is the principle rather than minor details that is important. If one may draw on the experience of treating certain growths by irradiation alone, it would seem most logical to consummate the major portion of treatment within a period of from six weeks to three months at most. Sporadic and prolonged irradiation of low intensity is not in keeping with the most favorable general experience in radiation therapy.

2. *Preoperative Irradiation.*—I strongly believe that preoperative irradiation with x-rays of maximum intensity and quality offers more than any other phase of radiation therapy in primary operable breast cancer at the present stage of development of the use of irradiation in this disease. It has encountered much opposition. The majority of radiologists favor it but rarely have an opportunity to practice it. Just why some radiation therapists are opposed is difficult to understand. It is easier to understand why the surgeon opposes it. He is usually unfamiliar with irradiation on the one hand and is bound by the teachings of his preceptors on the other. From a study of the surgical statistics it is obvious that surgery alone has not enough to offer to warrant brushing aside a valuable aid for the sake of operating immediately. The only legitimate excuse for immediate operation is in the case of questionable clinical diagnosis in which frozen sections are necessary as a guide to the extent of operation. One requires only the experience of dealing with various phases of breast cancer by irradiation over a period of years to see the fallacy of Crile's [9] statement that, in the fortnight necessary for such treatment, cells not completely destroyed would be growing and extending. Total destruction of all cells is not expected; if such were the case, operation would be contraindicated. Many cells are completely destroyed. The chief effect, however, is inhibition, growth restraint, regressive and degenerative cellular influences on tumor bed as well as tumor cell. The most carefully done operation entails a substantial degree of trauma as a result of which tumor emboli are apt to be dislodged and carried outside the field of operation. A certain number of the 25 per cent of five-year fatalities following operation in the class 1 cases are undoubtedly due to dissemination at a distance at the time of operation. Postoperative irradiation does not get at these. They are outside the field of postoperative irradiation. Preoperative irradiation of adequate intensity is capable of reducing this type of dissemination. When axillary nodes are involved, it becomes even more valuable in this respect. One needs only to follow a series of these cases to appreciate the advantage of preliminary irradiation. Moran [10] has suggested that one of the theoretical justifications of preoperative irradiation rests on the classic experiments of Murphy of the Rockefeller Institute with irradiated tumor implants and implant beds. The skin will tolerate a minimum of 2,400 roentgens over a fortnight, with 200 kilovolts, a filter of 1 mm. of copper and 60 cm. distance, without serious interference with the surgical procedure. Preferably the operation should be deferred from six to eight weeks, until full effect of the treatment is manifest and most of the inflammatory effect has subsided. On account of the fibrosis, the axillary dissection is slightly more difficult; but healing is not impaired if rigid asepsis is maintained. In some instances, immediate operation following irradiation is called for. The patient's convenience or temperament may influence this. At that stage the operative field is more hyperemic, but healing will not be impaired if proper surgical technic is observed, although it is slightly delayed in rate.

Preoperative irradiation means roentgen irradiation. This type of treatment is not amenable to small surface

7. Finzi, N. S.: X-Rays and Radium in the Treatment of Carcinoma of the Breast, Brit. M. J. **2**:728 (Oct. 22) 1927.

8. Luff, A. P.: The Incidence of the Cancer of the Breast and Its History After Treatment, Brit. M. J. **1**:897 (May 14) 1932.

9. Crile, G. W.: Malignant Tumors of the Breast, with Special Reference to Management and End-Results, Bull. Am. Soc. Control of Cancer **14**, March, 1932.

10. Moran, H. M.: The Modern Treatment of Mammary Cancer, read at the Federal Cancer Conference, Canberra, March 27, 1931.

applications of radium, and radium by implantation is distinctly contraindicated. It is quite a different problem than treatment by radiation alone. The unfavorable comment abroad, especially in Germany, is due to small dosage and to zone irradiation that is too limited. In my experience, tangential irradiation is not practical. It is only in the occasional case that the method can be applied with any degree of satisfaction. Preoperative irradiation has been followed at Radiumhemmet for the past several years and Westermark,[11] reporting a small series, finds 40 per cent of all cases, classes 1, 2 and 3, free from evidence of disease at the end of five years. The figure is substantially better than similar groups of cases treated by surgery and preoperative radiation only (29.3 per cent). In my own material I have been impressed by the absence of skeletal metastases in the cases that have received preliminary irradiation of maximum intensity consistent with primary surgical healing. It may be a coincidence; a long period of observation alone will be conclusive.

All patients treated preoperatively should, following operation, receive postoperative treatment to the point of maximum skin tolerance. The only possible exceptions to this rule are the class 1 Steinthal cases. The point of concentration of this postsurgical irradiation should be dependent chiefly on the anatomic conditions found at operation.

Reports are occasionally made of inoperable breast cancer rendered operable by irradiation. In my judgment, breast cancer once inoperable is always nonsurgical as far as the direct treatment of the disease obtains. The more spectacular the regression, usually the more malignant, and hence the more dangerous from a surgical approach. It is at times very tempting to reconsider in favor of operation after a pronounced regression of a tumor primarily judged to be inoperable. The obvious benefit from the irradiation, however, had best be accepted gratefully and added to by the same agent. Indications for operation in such cases are usually not aimed at direct cure of the disease but for other reasons, and are usually local rather than radical procedures. The patient with a very large fat breast may well carry on more comfortably after a local mastectomy, or an area of impending secondary ulceration may to advantage be avoided by the same means.

3. *Accessory Irradiation.*—From time to time the question has been raised of possible added benefit through castration to the patient with breast cancer. Since it is so readily accomplished by irradiation of the ovaries, it is employed by some radiologists as a routine procedure when indicated. From a detailed study of the entire problem, Taylor [12] concluded that the ovarian hormone was a factor of influence. There seems to be no convincing evidence, however, of practical benefit through incorporating ovarian irradiation with preoperative and postoperative irradiation. In a small series of carefully observed cases at Radiumhemmet Ahlbom [13] was unable to find evidence that would support the theory in a practical manner.

4. *Irradiation at Time of Operation.*—In certain instances, radium by implantation, preferably radon in gold seeds, may be used to advantage, depending on the anatomic observations. Reference is made to the posterior portion of the axilla and to the upper intercostal spaces adjacent to the sternum, to which Sampson Handley has so frequently referred.

Before any extensive program of irradiation or surgery in operable breast cancer is assumed, a meticulously careful radiodiagnostic check up should be made of the chest and skeleton. It is a safeguard against grief and embarrassment in a few cases. The chief value lies in an early and permanent record for subsequent comparisons which symptoms may call for.

RADIATION AS THE SOLE MEANS OF TREATMENT

Experience is gradually accumulating on this vital and fascinating phase of mammary cancer therapy. Opinion will differ sharply as to whether the advising of such a procedure freely, in operable breast cancer, at the present time represents courage or foolhardiness. The conscience of the seasoned radiologist or cancer surgeon must be his guide. There may be a very nice distinction at this stage of the development of work between the responsibility one may assume under circumstances of strong personal pressure and the routine of professional work. At least there is a wealth of experience with all types of radiation and in all phases of the advanced disease as a background. There are a good many technically operable cases in which successful treatment over a period of years has been carried on. For one reason or another—age, general constitutional conditions or abnormal aversion to surgery—the radical operation has been withheld and irradiation substituted. On this basis alone, a substantial amount of material will be accumulated within a few years. To date, much of such material is of value only to those actually participating in the care of the individual case. Few biopsies have been obtained.

My first primary operable breast cancer treated by irradiation only, and now well over fourteen years ago, fails to be of value or conclusive to other than the three experienced cancer clinicians who concurred in the original clinical diagnosis, for just this reason: A woman, aged 49, had a tumor in the upper outer quadrant of the breast which was steadily progressing in size up to 2.5 to 3.5 cm. diameter, and over a known period of three months. There was a questionable node palpable low in the axilla. However, the case is best rated as Steinthal, class 1. For esthetic reasons—the patient was a concert singer—she was strongly opposed to surgery and knowing something of radiation pressed for treatment by the physical agents. She finally offered to assume her own future risk if I would but agree to this course. I treated her with the 1919 type of low voltage roentgen radiation and followed it by implantation of unfiltered radon into the tumor and the under surface of the free border of the pectoralis major muscle. The tumor regressed rapidly at first and then more slowly. After three years there was a dense residual mass in the breast and telangiectasis of the overlying skin, such as was common with that quality of roentgen radiation. There has been no noticeable change since.

Only a biopsy is necessary to make even one such case of that duration a matter of valuable record. Various authors, Moran and Wintz particularly, have pointed out that a biopsy is safe if deferred until a fortnight after irradiation has been initiated. By careful handling of tissues and through a small incision, placed as obscurely as possible, information may safely be obtained. The value as a future guide in therapy

11. Westermark, N.: Result of the Combined Surgical and Radiologic Treatment of Cancer Mammae at Radiumhemmet, 1921-1923, Acta radiol. **11:** 1, 1930.

12. Taylor, H. C., Jr.: The Etiology of Neoplasms of the Breast, Arch. Surg. **21:** 412 (Sept.); 597 (Oct.) 1930.

13. Ahlbom, Hugo: Castration by Roentgen Rays as an Auxiliary Treatment in the Radiotherapy of Cancer Mammae at Radiumhemmet, Acta radiol. **11:** 614, 1930.

adequately compensates the patient for the slight inconvenience, and it is invaluable to the future record. The theoretical objections to a biopsy are far outweighed by the practical information obtained. A tissue section represents the central point of the data-complex on which relative radiosensitivity is based, and on this in turn better radiation therapy is dependent. A biopsy by needle puncture under negative pressure is unsuitable for breast diagnosis except as a last resort.

Any attempt at this time to define the types of operable breast cancer which might justifiably be turned to irradiation entirely resolves itself into an expression of personal preference by the individual author. Certainly there should be little question about those suffering from a grave constitutional disease as well as the elderly and the very young. Elderly patients are prone to carry on for many years without treatment. In very young subjects, surgical results are so discouraging that any benefit from irradiation might well be considered a gain. Furthermore, the esthetic side in these patients lends strong support to the conservative method. In my opinion, cases with a long history of recognized tumor prior to seeking treatment should be considered poor surgical risks even though the local conditions place them in the operable class; irradiation instead might well be considered acceptable. This is equally true of cases of the advanced Steinthal class 2 group—those with extensive palpable node involvement.

One cannot help but admire the bold position taken by Geoffrey Keynes [14] and some of his associates in London. Since the London Cancer Conference of 1928, a number of English radiologists have become ultra-radium minded. It is questionable whether or not good judgment from a physical standpoint has kept pace with their bold stand on radium for breast cancer. At any rate, they seemingly stress the value of radium without giving quite as serious consideration to roentgen irradiation. It is a matter of individual opinion as to whether or not their recommendation of radium as the sole treatment for most operable breast cancers is premature. Keynes introduces radium needles, and for several days' exposure, on two occasions on each patient, each introduction being made under general anesthesia. Handley disagrees with the claimed uniformity of the distribution of radiant energy by his technic. Fitzwilliams [15] agrees with the Keynes technic and is seemingly more radical than the latter in his assignment of material to this method of treatment. Cade [16] endorses it but places added stress on surface applications of prolonged duration. The obvious factor of trauma incident to two introductions of many large radium needles, and each set must in turn be removed, is not in keeping with the generally accepted view of trauma in a tumor-bearing area. Mr. Souttar [17] has obviated this in large measure in his cases by using permanent gold-filtered radon implants. The two anesthesias give the impression of a major surgical procedure. In my own experience, external irradiation with x-rays, in intensity going far beyond that previously outlined for preoperative therapy, in multiple divided doses and of the shortest available wavelength, will afford complete local control of many breast tumors. A few cases extend now to six and seven years. In some instances the intensity requires implantation following the external irradiation, and for this radon in 0.3 mm. wall-thickness gold seeds is used. Radium for external irradiation, in quantities sufficient to parallel the present-day roentgen radiation, is neither economic nor practical.

Even though responsibility for the breast cancer in certain instances is placed on irradiation, a subsequent need for surgery occurs at times. In the very large pendulous fat breast, granting "sterilization" of the growth by irradiation, a simple mastectomy may render the patient much more comfortable. I cannot agree with Finzi that removal should be done as a routine after the tumor is "cured" by irradiation. There may well be justification for this position, however, in the scirrhous type of tumor, on account of its radioresistance and danger of subsequent reactivity. Secondary necrosis rarely occurs, but when it does, or preferably when it is threatened, local mastectomy is indicated for comfort and for the peace of mind of the patient. It is impossible to eliminate all surgery from any one group of cancers of the breast. Finally, while irradiation alone seems amply justified, in fact preferable, in certain groups of primary operable breast cancer, it also seems decidedly premature to regard it as the method of choice in the majority of cases. This is especially true in view of the marked improvement in results through combining preoperative and postoperative irradiation with the radical operation.

In attempting to make an appraisal of the probable value of irradiation in a given case, many factors must be considered. The histologic character of the growth is important and with added experience will become much more so. The size and location of the primary tumor in the breast, its known duration, presence or absence of axillary nodes. its location and extent are all important in selecting and directing the local irradiation. The age of the patient and the rate of growth are of value in governing the intensity of treatment. The general physical condition of the patient and the presence or absence of secondary anemia have substantial bearing on the probable manner in which irradiation will be tolerated and on the reaction to it.

Whatever agent, method or combination of x-rays and radium, with or without surgery, is decided on, no fixed routine plan is desirable. Adherence to fixed principles of therapy, rather than to fixed technical details, is the important factor. The factors of influence just previously mentioned must be correlated with what is expected to be accomplished by the irradiation.

THE RELATIVE VALUE OF X-RAYS AND RADIUM

In early breast cancer there seems little room for doubt that roentgen radiation occupies the major position. Most of the treatment is by external application and over wide areas; for this, x-rays are technically best adapted and most economic. Radium occupies a limited but valuable place, and always for implantation. Occasionally a primary tumor assigned wholly to irradiation requires implantation, and at operation radium by implantation may frequently be used to advantage in the axilla or the upper intercostal spaces adjacent to the sternum. For these purposes, radon in gold seeds affords a wide range or flexibility in application and is much less damaging from the standpoint of

14. Keynes, Geoffrey: The Treatment of Primary Carcinoma of the Breast with Radium, Acta radiol. **10:** 393, 1929; Treatment of Primary Carcinoma of the Breast with Radium, Practitioner **125:** 462 (Oct.) 1930; Radium Treatment of Carcinoma of the Breast, Lancet **1:** 439 (March) 1930.

15. Fitzwilliams, D. C. L.: The Modern Treatment of Carcinoma of the Breast, Practitioner **125:** 483 (Oct.) 1930.

16. Cade, Stanford: Cancer of the Breast, Practitioner **125:** 469 (Oct.) 1930.

17. Souttar, H. S.: Treatment of Carcinoma of the Breast by Radium Emanation, Brit. M. J. **1:** 813 (May 13) 1933.

trauma. Radium or radon implantation should always follow rather than precede the roentgen irradiation. Whatever the combination, and with few exceptions, the intensity of irradiation should be the maximum consistent with the tolerance of normal tissues within the zone of irradiation, and the quality always of the shortest wavelength available from up-to-date equipment. There is a limited time interval within which both the tumor and the tumor bed react most favorably to any type of irradiation, and improvement in results demands that advantage be taken of this. Meticulous attention to detail is quite as essential to success in radiation therapy as in surgery. As Moran has so aptly stated, "the careless radio-therapist, like the rough-handed surgeon, may cause grave mischief."

SUMMARY

1. Heretofore, irradiation has been limited almost entirely to postoperative treatment. Reference is made to primary operable breast cancer exclusively.

2. Postoperative irradiation has improved the five-year curability results.

3. The experience to date warrants advancing the status of radiation therapy in this group of cancer.

4. Preoperative irradiation is probably of greater relative value than postoperative.

5. In all cases of radical mastectomy, preoperative and postoperative irradiation should be employed.

6. While the ovarian hormone evidently exerts an influence on the development of some breast cancers, there is no substantial evidence to warrant castration by irradiation as a therapeutic aid.

7. As the sole means of treatment, irradiation is justifiable and undoubtedly preferable in certain cases.

8. To consider irradiation alone the method of choice in all cases of this group is premature.

9. Cases treated by radiation alone require biopsy not only for guidance in therapy but also to complete the record.

10. Biopsy is safe if carefully done after preliminary irradiation.

11. Of various methods of irradiation, preference has been given to x-rays for external therapy over wide areas and to gold seeds of radon for implantation.

12. X-rays occupy by far the major position in the radiation therapy of this group.

13. The same degree of attention should be given to technical detail in radiation therapy as in surgery.

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ABSTRACT OF DISCUSSION

DR. FRED O'BRIEN, Boston: The report on irradiation of breast cancer, which appeared in 1930 under the auspices of the American College of Surgeons, practically put an end to radiation therapy of the breast in my particular hospital for about two years because it was carelessly read and carelessly interpreted. Although Greenough stated that he was reporting statistics based on procedures of the decade 1910 to 1920 and that the data on irradiation were insufficient to form a basis on which to draw conclusions, I agree with Dr. Quick that the Halstead operation should be the standard operation, but it is far from being accepted by surgeons in general. There has been criticism of radiation therapy in the past because of the variety of methods employed, yet roentgen therapy has been in flux from the very nature of the thing, while the operation of Halstead has been known since 1894. There appeared a review in THE JOURNAL of operative procedures on the breast as practiced throughout the United States. It was found that only about 50 per cent of the surgeons employed the complete operation. It was most injudicious to be dogmatic about postoperative irradiation under those circumstances. I think that better results may be expected from clinics in which the surgical and the roentgen therapy methods are uniform. I think that Dr. Quick is correct when he says that it does not make any difference whether the patient is operated on the next day after the tumor mass has been found or two weeks from that time. These cases should be handled through a tumor clinic, so that patients will not get into the hospital before they have had their preoperative irradiation. Dr. Quick spoke about the time for postoperative treatment and said something about waiting for healing. My own feeling is very definite that irradiation does not retard healing; in fact, I know that it helps in the healing of many wounds. I have always thought that preoperative irradiation was most logical. If it is good afterward it ought to be equally good, if not better, before. I have seen no skin damage in recent years. Lord Moynihan stated in New York a few years ago that surgery had had its chance and had accomplished nothing and that he believed that now irradiation should be given its chance.

DR. U. V. PORTMANN, Cleveland: Dr. Quick has asked me to speak about the percentage of axillary involvement in my report of several years ago, which was based on statistics given by pathologists. I think the figure of 95 per cent of axillary involvement is probably a little too high and that it should be about 85 per cent. In other words, about 15 per cent of cases do not present axillary node involvement. This paper is not given with the idea of eliminating the surgical treatment of cancer of the breast but with the idea of proper treatment according to indications. With Dr. Quick, I think that as radiologists we should insist on some classification based on clinical rather than microscopic observations. It is my experience that I can tell more about what the subsequent course will be from the clinical story than I can from what the pathologist tells me. When a scirrhous type of growth is present, an entirely different clinical problem is presented than when more rapidly growing tumors are concerned. A tumor of long duration cannot be affected much by radiation and operation is preferable. Perhaps Dr. Quick will agree with me that the less clinically malignant, the less radiosensitive the tumor will be. I certainly agree with Dr. Quick that a primarily inoperable case never becomes operable. This applies not only to breast carcinoma but also to malignant neoplasms in any other place in the body. As Dr. Quick has prophesied, more cases of cancer of the breast will be turned over to the radiologist. But it is unfortunate that only about 15 per cent of all these patients have no axillary nodes involved and these are ideal for irradiation. As the skin becomes infiltrated by the neoplasm, the surgeon has a difficult task and I suppose that no surgeon will say that he can remove all the axillary involvement in 50 per cent of his cases. It has been my experience that a great many of them do not excise widely enough. It is in the operable cases that irradiation should be most valuable. In a great many the tumor itself can easily be eliminated by interstitial irradiation, and external irradiation will often destroy the skin extension.

DR. DOUGLAS QUICK, New York: I want to stress the need among radiologists to group these cases on some practical basis. While various means have been suggested, I lean toward the clinical and anatomic basis, because it is simple and permits of drawing rather straight lines. The group 1 cases are those strictly primary breast tumors without palpable nodes. The second class includes those with palpable, technically operable, nodes, and the third class, those with fixation of the primary tumor or with distant involvement. A good deal of knowledge on the relative radiosensitivity of these tumors is being acquired but it is not comparable with existing knowledge of radiosensitivity in certain other groups. Consequently it cannot be leaned as heavily on as a guide at the present time, but I think that a point will be reached where, from a histologic standpoint, one can pick out more definitely the types best suited to irradiation. I should like to stress the encroachment, if one chooses to call it that, of the radiologist on the breast cancer field. It represents a cooperative and not a competitive effort in any sense.

GASTRIC ACIDITY IN THYROID DYSFUNCTION

S. ALLEN WILKINSON, JR., M.D.

BOSTON

It has been recognized for some time that hyperthyroidism causes changes in gastric acidity and that in some cases there is an absence of hydrochloric acid. Hardt [1] in 1916 called attention to the fact that thyroid feeding caused lowered gastric acidity in normal dogs. Barker [2] in 1918 mentioned hypochlorhydria, and King [3] in 1919 noted that achlorhydria and achylia occur in hyperthyroidism. Lockwood [4] in 1925 and Moll and Scott [5] in 1927 reported a high incidence of achlorhydria in exophthalmic goiter. Following this line of thought, Truesdell [6] in 1926 showed that a lowering of acidity could be produced regularly by feeding thyroid to dogs, and in some achlorhydria was produced.

On the other hand, Crile [7] and his co-workers have held that the same mechanism that produced hyperthyroidism could in some cases produce peptic ulcer. He has also stated that denervation of the suprarenals and a hemithyroidectomy frequently relieves recurrent peptic ulcer. If this theory is true, hyperthyroidism should raise, not lower, the gastric acidity. Lerman and Means [8] have shown, however, that there is a definite tendency to lowered gastric acidity in hyperthyroidism and that the proportion of achlorhydria is increased beyond the normal.

This study was undertaken to show the relationship between hyperthyroidism and gastric acidity and to determine to what extent the acid returned to its normal level after relief of the toxicity. Also, we wanted to see what effect a postoperative lowering of the basal metabolic rate below the normal level would have on gastric acid.

This study comprises the results of gastric analyses in 100 cases of hyperthyroidism, taken before operation. At the Lahey Clinic it is the practice to have all patients return three months after partial thyroidectomy for a check-up metabolism. Of the original 100 cases, we were able to get only about one half back for check-up gastric studies. This was due partly to the reluctance of some patients to have a second test, partly to inability to return, and partly to the fact that three months has not elapsed since some of the original tests were made. It was felt, however, that for purposes of averages, a comparable number of postoperative check-ups would give as much information. Consequently, determinations were made in 114 cases. In addition, there was a much smaller group of patients with spontaneous myxedema who had had no operative history. Determinations were made in as many of these as possible, but cases of true myxedema are rare. Hurxthal [9] has shown that, in order to be classified as true spontaneous myxedema, the patient should first present the clinical signs and symptoms of the disease, secondly he should have a low metabolism and lastly he should have an elevated blood cholesterol. Many patients have a low metabolism but they do not fulfil the other two criteria and are not benefited by thyroid medication.

The method of gastric analysis used in this series was the same in all cases. A test meal of 50 cc. of 7 per cent alcohol was given on a fasting stomach after all the residual stomach contents had first been aspirated. Five minutes later a subcutaneous injection of histamine acid phosphate was given. The dose used was 0.1 mg. of histamine for each 10 Kg. of body weight. Fractional samples of the gastric contents were taken at thirty, sixty and ninety minutes. While it is usually customary to aspirate at fifteen-minute intervals and for a two-hour period, a short preliminary series indicated that, for all practical purposes, this test was just as accurate and much simpler. In no case in this series was acid obtained at the one and one-half hour extraction when it had been absent in all the previous extractions. The averages in this series were obtained from the maximum free and total acid values obtained during the course of each test.

TABLE 1.—*Hyperthyroidism: Averages Before Operation*

Metabolism	Cases	Basal Metabolic Rate	Free Acid	Total Acid	Variations in Acidity: Free Acid	Variations in Acidity: Total Acid
Over +35 with acid	40	+52	34.7	46.8	3-80	6-92
Under +35 with acid	24	+20	42.7	54.5	6-76	12-92
Over +35 without acid	30	+52	0	14.8	0	4-30
Under +35 without acid	6	+28	0	15.0	0	10-20
Averages, all cases	100	+42.8	24.0	36.9		

There is considerable divergence of opinion as to what constitutes the normal level of acidity. For my purposes in this paper the normal level is irrelevant, as the figures quoted are on a comparative basis rather than a fixed standard. Vanzant and others [10] have reported a large series with the standard Ewald meal and a single one-hour extraction. Histamine was not used as a routine in their series. They give the average figure for free acid at 40 and the total acid at 57. Lerman, Pierce and Brogan,[11] using an alcohol test meal and histamine, report the normal free hydrochloric acid as 40.4 and the total acid as 50.1.

In table 1 are the averages of 100 cases of toxic goiter; of these, 91 cases were primary hyperthyroidism and 9 were adenomatous goiter with secondary hyperthyroidism. Thirty-six patients had achlorhydria. In the group with free acid are included about ten patients who had a very low acid (under 10). As the table indicates, a large proportion of those who had achlorhydria fell in the group who had a basal metabolic rate higher than + 35.

From the Department of Gastro-Enterology of the Lahey Clinic.

The New England Deaconess Hospital Pharmacy furnished the histamine used in this study.

Read before the Section on Gastro-Enterology and Proctology at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 15, 1933.

1. Hardt, L. L. J.: The Secretion of Gastric Juice in Cases of Gastric and Duodenal Ulcers, Am. J. Physiol. **40:** 314-331 (April) 1916.

2. Barker, L. F.: Endocrine Functions and the Digestive Apparatus, Tr. Am. Gastro-Enterol. A. **14:** 220-245, 1918.

3. King, J. H.: Gastro-Intestinal Disturbances in Metabolic Diseases and in Diseases of the Ductless Glands, M. Clin. North America **2:** 1655 (May) 1919.

4. Lockwood, B. C.: The Digestive Tract and Endocrine Function, J. A. M. A. **85:** 1032-1036 (Oct. 3) 1925.

5. Moll, H., and Scott, R. A. M.: Gastric Secretion in Graves' Disease, Lancet **1:** 68 (Jan. 8) 1927.

6. Truesdell, C.: The Effect of Feeding Thyroid Extract on Gastric Secretion, Am. J. Physiol. **78:** 20-27 (March) 1926.

7. Crile, G. W.: Interdependence of Adrenals, Thyroid Gland, and Sympathetic Nervous Systems with Clinical Application, Illinois M. J. **57:** 97-101 (Feb.) 1930; Recurrent Hyperthyroidism, Neurocirculatory Asthenia and Peptic Ulcer: Treatment, J. A. M. A. **97:** 1616-1618 (Nov. 28) 1931.

8. Lerman, J., and Means, J. H.: The Gastric Acidity in Exophthalmic Goiter and Myxedema, J. Clin. Investigation **11:** 167-182 (Jan.) 1932.

9. Hurxthal, L. M.: Blood Cholesterol in Thyroid Disease: II. Effect of Treatment, Arch. Int. Med. **52:** 86 (July) 1933. Mason, R. L.: Hunt, H. M., and Hurxthal, L. M.: Blood Cholesterol Values in Hyperthyroidism and Hypothyroidism: Their Significance, New England J. Med. **203:** 1273 (Dec. 25) 1930.

10. Vanzant, F. R.; Alvarez, W. C.; Eusterman, G. B.; Dunn, H. L., and Berkson, Joseph: The Normal Range of Gastric Acidity from Youth to Old Age, Arch. Int. Med. **49:** 345-359 (March) 1932.

11. Lerman, J.; Pierce, F. D., and Brogan, A. J.: Acidity in Normal Individuals, J. Clin. Investigation **11:** 155-165 (Jan.) 1932.

Table 2 shows the averages three months or more after operation in 114 cases. In this group, twelve, or 10.5 per cent, showed no acid, while 102, or 89.5 per cent, showed free acid. The level of acidity has risen in the whole group as well as in the cases in which there was free acid. The average free acid was 46, as compared with 24 in the group before operation. The highest level of free acidity before operation was 42.7 in the group with a basal metabolic rate of less than + 35, whereas in this postoperative group with free acid the average is 51.2.

Table 3 shows the results after operation in twenty-five of the original thirty-six patients who had no acid before operation. These check-up tests were all made about three months after partial thyroidectomy. In this group only three still showed achlorhydria, while twenty-two had regained their acid.

In table 4 are those cases presenting low metabolic rates. There were only five cases of spontaneous myxedema. One of these patients had been taking thyroid for two years, and it is interesting that she had achlorhydria. Of the other four who had never had thyroid, the minimum free acid was 83 and the maximum was 98. One of these patients was later found to have a duodenal ulcer. In the postoperative hypothyroid group, none of whom had the clinical signs of myxedema, the average acidity is also very high. I realize that this series is too small to justify any general conclusions, but it shows an interesting trend.

TABLE 2.—*Hyperthyroidism: Averages After Operation*

	Cases	Free Acid	Total Acid	Variations in Acidity: Free Acid	Variations in Acidity: Total Acid
With acid	102	51.2	63.5	5-95	23-110
Without acid	12	0	13.9	0	10-22
All cases	114	46.0	58.1		

ACHLORHYDRIA

Our figures agree quite accurately with those of Lerman and Means [8] with respect to lowering of acidity in toxic goiter. Their series of fifty cases shows 38 per cent of achlorhydria as compared with the figure of 13 per cent according to the observations made by Lerman, Pierce and Brogan [11] in a series of 200 normal persons. The latter figure of 13 per cent is much higher than that quoted by Bockus, Bank and Willard,[12] which was 5.7 per cent; but these last investigators used a bread and water test meal with histamine instead of an alcohol test meal. We are in agreement with Lerman and Means, who state that the achlorhydria cannot be accounted for on the basis of a general lowering of acidity. The average level of acidity is about one-half the normal, while the incidence of achlorhydria is increased at least four times.

While it is true that the majority of the cases of achlorhydria fall in the high metabolism group above + 35, this does not, in itself, seem sufficient to account for the figures obtained, as in the same group there were forty cases that showed an average free acidity of 34.7. In searching for a better explanation, we investigated the duration of symptoms of toxicity and found that, whereas the group with free acid showed an average duration of 9.2 months and 68 per cent of this group an average duration of only 3.8 months, the achlorhydric group showed an average duration of 16.6 months, and only two cases in this group had had symptoms less than six months. It seems, therefore, that the development of achlorhydria depends on the duration rather than on the degree of toxicity.

Of more interest than the actual development of the achlorhydria is the fact that these patients recover their acid so promptly. Three months after relief of the toxicity, 89.5 per cent have recovered their normal gastric acid, and this recovery takes place as well in the anacid group as in the group with free acid. The rise of acid must take place fairly promptly, and apparently it returns to the normal level and even passes this level. We have no figures to show whether it later falls again.

TABLE 3.—*Results After Operation for Hyperthyroidism: Twenty-Five Cases with Achlorhydria Before Operation*

Original Metabolism	Cases	Free Acid Present*	Free Acid Absent
Over +35	20	18	2
Under +35	5	4	1
Totals	25	22	3

* Average free acid of this group was 44.

There have been theories as to whether the depression of gastric acid was a result of actual damage to the gastric mucosa or the result of some constitutional cause. Our observations do not indicate any damage to the gastric mucosa and point to a depression of glandular function. It is well recognized that most of the symptoms of hyperthyroidism are those of extreme overstimulation of the sympathetic system. It is also recognized that, when the sympathetic nervous system is stimulated, the autonomic system is correspondingly depressed. Might not this change in gastric acidity be an expression of the same mechanism that produces the warm skin, the perspiration, the tremor and general activation? Moll and Flint [13] have touched on this and point out that, both in man and in animals, epinephrine in sufficient doses over a considerable period of time will markedly depress gastric secretion and gastric acidity. They also point out that nicotine, which depresses sympathetic nerve endings, produces hyperchlorhydria.

TABLE 4.—*Low Metabolic Rates: Averages*

	Cases	Basal Metabolic Rate	Free Acid	Total Acid	Before Operation: Free	Before Operation: Total
True myxedema	5	—24	67.5	81		
Postoperative hypothyroidism	4	—23	81.9	94	22	37

MYXEDEMA

The evidence presented in the literature concerning gastric acidity in hypothyroidism is conflicting. Katz,[14] Levy [15] and Hutton [16] concur in stating that low thyroid function produces hyperchlorhydria. On the other

12. Bockus, H. L.; Bank, J., and Willard, J. H.: Achlorhydria with Review of 210 Cases in Patients with Gastro-Intestinal Complaints, Am. J. M. Sc. **184**: 185-201 (Aug.) 1932.

13. Moll, H., and Flint, E. R.: The Depressive Influence of the Sympathetic Nerves on Gastric Acidity, Brit. J. Surg. **16**: 238-307 (Oct.) 1928.

14. Katz, J.: Deficient Thyroid Secretion as an Etiologic Factor in Gastric and Duodenal Ulcers and in Hyperacid Conditions, M. Rec. **97**: 916 (May 29) 1920.

15. Levy, M. D.: Endocrine Influence on Gastric Secretion with Special Reference to Hypothyroidism, New Orleans M. & S. J. **81**: 487-493 (Jan.) 1929.

16. Hutton, J. H.: Effects of Hypothyroidism, Illinois M. J. **42**: 337 (Nov.) 1922.

hand, Lockwood [4] found achlorhydria in 60 per cent of ten cases of myxedema. Lerman and Means [8] found nine cases of achlorhydria in seventeen cases of hypothyroidism. Our series is too small to be of much weight, but such evidence as we have points toward a definitely increased acidity in these cases. In those patients who conformed to the criteria for myxedema, the free acid was 67.5 and the total acid 81. In the postoperative low metabolism group the acidity was even higher. One of these patients had achlorhydria before operation.

SUMMARY

1. Of 100 cases of hyperthyroidism, 36 per cent showed achlorhydria, and the average acid of all cases was reduced to slightly more than half the normal.

2. The observation is made that the incidence of achlorhydria in hyperthyroidism rises in proportion to the duration of the toxicity rather than the degree of the toxicity.

3. After thyroidectomy, only 10.5 per cent show achlorhydria. The average free acid is raised to about the normal value for the entire series.

4. A theory is offered that the depression of gastric acidity is a phenomenon of extreme sympathetic overstimulation.

5. Hypothyroidism, in our series at least, produces a definite tendency to hyperacidity.

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ABSTRACT OF DISCUSSION

DR. RALPH C. BROWN, Chicago: The point of chief interest in Dr. Wilkinson's study is the evidence showing a return of normal physiologic activity in the gastric secretory glands after subsidence of hyperthyroidism following thyroidectomy. This evidence supplies what would seem to be convincing proof of the influence of thyrotoxicosis in suppressing gastric secretion. The fact that all but three of the twenty-five rechecked cases which had been achlorhydric under histamine prior to thyroidectomy regained an average free hydrochloric acid of 44 after recovery from thyrotoxicosis is of evident importance. This emphasizes the need for caution in assuming that a gastric secretory mechanism which fails to respond to histamine is likely to be permanently disabled. The presence or absence of the ferments is a much more reliable basis for a prognosis regarding possible future secretory activity. A review of seventy cases of hyperthyroidism and ten cases of myxedema treated at the Presbyterian Hospital in which gastric secretion studies were made, a standard Ewald meal without histamine being used, yielded figures somewhat at variance with those just reported. In nineteen cases of moderately severe and severe hyperthyroidism with basal metabolic rates ranging from plus 36 to plus 82, I found only three cases of achlorhydria, or 16 per cent, a figure only 3 per cent higher than the incidence of achlorhydria in otherwise normal individuals. There were five cases in the subacid group (free hydrochloric acid 1-20), nine cases presenting normal acid values (free hydrochloric acid 21-40), and two cases of hyperchlorhydria (free hydrochloric acid 41 plus). The average basal metabolic rate in this group of nineteen cases was plus 48. The average duration of symptoms of thyrotoxicosis was fourteen months. In the less severe group of thirteen cases, with rates ranging from plus 26 to plus 35, only one case of achlorhydria was found, six of these cases presenting a normal acidity and six definite hyperacidity. Combining these figures, one has thirty-two cases of hyperthyroidism, in which only four, or 13 per cent, presented achlorhydria. The average metabolic rate for the entire group was plus 41. The average acidity was 32 points of free hydrochloric acid, and the average duration of toxic symptoms was 16.8 months. It may be worth noting that in a larger series, thirty-nine cases, of mild but (according to my point of view) definite cases of hyperthyroidism showing rates ranging from plus 16 to plus 25, I found four achlorhydrias with only five subnormals; nineteen cases, or 50 per cent of the group, showed normal gastric secretion; and eleven cases, hyperchlorhydria. The average duration of symptoms was twenty months. Regarding hydrochloric acid values in myxedema: In ten cases in which the basal metabolic rates ranged from minus 22 to minus 47, and an average of minus 32.6, two were anacid, four were subacid, three gave normal hydrochloric acid values and only one showed a hyperacidity. Again, the number of cases is small, but the observations certainly do not suggest a tendency to hyperchlorhydria in myxedema. Lerman and Means found nine cases of achlorhydria in seventeen cases of myxedema. I should like to ask Dr. Wilkinson whether evidence of any marked lowering of pepsin and rennin secretion was observed in these cases during the achlorhydric phase; also whether any observations were made indicating any greater incidence of gastro-intestinal symptoms, especially diarrhea, in the achlorhydric group of cases than in the cases of acid secretion.

DR. S. ALLEN WILKINSON, JR., Boston: I am indebted to Dr. Brown for his discussion. I do not know how to explain the divergence in figures he has quoted as compared with mine. It is true that in my first twenty cases I failed to find any unusual incidence of achlorhydria. I have no idea why this happened. With regard to changes in gastric ferment, I did tests for gastric rennin in ten cases of this series who showed achlorhydria. Rennin was present in all of the ten cases, and there were none which I could call achylia gastrica.

METABOLIC ACTIONS OF DINITROPHENOL

WITH THE USE OF BALANCED AND UNBALANCED DIETS

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AND
M. L. TAINTER, M.D.
SAN FRANCISCO

Dinitrophenol (1-2-4) has been shown to increase promptly the metabolic rate in man and laboratory animals to almost any desired level. This action is peripheral, in the tissues, and independent of nervous and glandular functions. Small doses cause a slight increase in oxygen consumption; larger doses cause heat production that may surpass the ability of the animal to dissipate it, so that death occurs from heat rigor.[1] We [2] have suggested that, in proper dosage, dinitrophenol would be a potent therapeutic agent in obesity and in conditions in which a heightened metabolism might be desired. In a consideration of such possible uses the question arose of the source of the fuel for the increased metabolism. That is, dinitrophenol might promote the burning of carbohydrate, fat or protein, or all these fuels equally readily. A selective action on some one fuel appeared unlikely. An attempt was made, therefore, to study this question for human metabolism, experimental diets applicable to clinical conditions being used. The results are reported in this paper. Briefly, the results show that during medication with dinitrophenol the human body can maintain nor-

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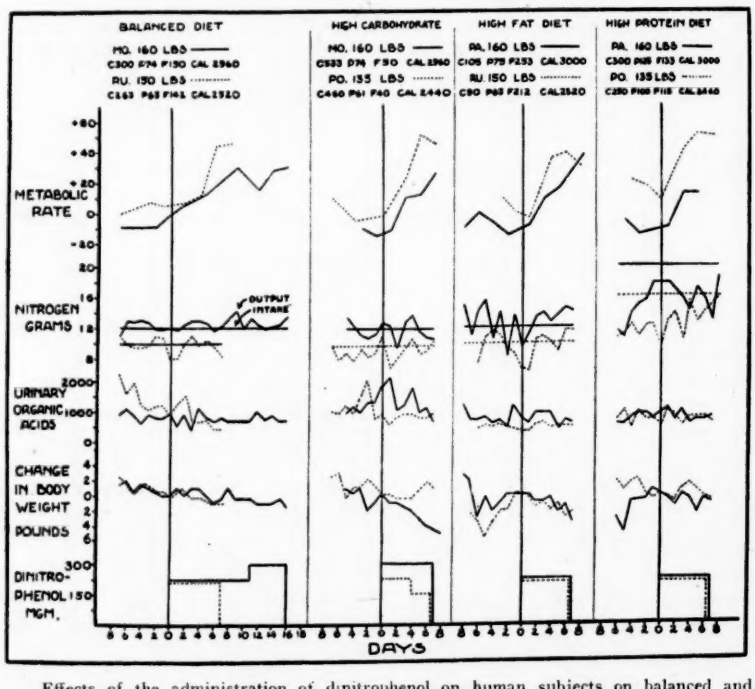
1. Cutting, W. C., and Tainter, M. L.: Proc. Soc. Exper. Biol. & Med. **29:** 1268 (June) 1932. Tainter, M. L.; Boyes, J. H., and DeEds, F.: Arch. internat. de pharmacodyn. et de thérap. **45:** 235 (May 15) 1933. Tainter, M. L., and Cutting, W. C.: J. Pharmacol & Exper. Therap. **48:** 410 (Aug.) 1933; **49:** 187 (Oct.) 1933. Hall, V. E.; Field, J.; Sahyun, M.; Cutting, W. C., and Tainter, M. L.: Am. J. Physiol. **106:** 432 (Nov.) 1933.

2. Cutting, W. C.; Mehrtens, H. G., and Tainter, M. L.: Actions and Uses of Dinitrophenol, J. A. M. A. **101:** 193 (July 15) 1933. Tainter, M. L.; Stockton, A. B., and Cutting, W. C.: Use of Dinitrophenol in Obesity and Related Conditions, J. A. M. A. **101:** 1472 (Nov. 4) 1933.

mal nitrogen and acid-base balances while reacting with the usual increase in metabolism, regardless of the type of food consumed and without undesirable symptoms.

METHODS

Eight experiments were made on four subjects with four different diets, each diet being taken by two different individuals. In each experiment a subject was placed on a given diet for two weeks or longer, and his body weight, basal metabolism, nitrogen balance, and urinary organic acids were determined at regular intervals. The first week served as a control period without medication. Immediately following, during the second week, occurred the experimental period with dinitrophenol. The diets in all cases contained 40 calories per kilogram of body weight, a value considered to be adequate for subjects leading a sedentary life and possessing a normal metabolic rate. The diets were all carefully prepared and controlled in the special diet laboratory of the Stanford hospitals. Fluids were not limited. Each subject was weighed daily at the same hour. Nitrogen intake was calculated from protein intake, 6.25 Gm. of protein being used as the equivalent of 1 Gm. of nitrogen.



Effects of the administration of dinitrophenol on human subjects on balanced and unbalanced diets: composition of the diets for each subject, metabolic rate, total daily nitrogen intake and output, total daily urinary organic acids, changes in body weight and dosage of dinitrophenol.

The metabolism was determined under basal conditions early in the morning, three times a week. No food or fluids were taken for at least twelve hours before the metabolic test, and there was a rest in bed of half an hour immediately preceding it. Twenty-four hour specimens of urine were collected daily and analyzed for urinary nitrogen by the macro-Kjeldahl method. To the value for urinary nitrogen output there was added an arbitrary value of 1.3 Gm. as an average value for daily nitrogen in the feces.[3] The values for nitrogen output throughout this paper are the sum of these two quantities. The organic acids in the urine were estimated by the titration method of van Slyke.[4] The values are expressed as cubic centimeters of tenth normal hydrochloric acid, required for the neutralization of the urine in twenty-four hours. It was assumed that, if the acid-base balance was disturbed or if acetone bodies were excreted, the organic acid figure would be increased. The dinitrophenol was administered in capsules as a single daily dose by mouth and before breakfast.

REGULAR DIET

In the first experiment, the subjects were placed on diets containing 1 Gm. of protein per kilogram of body weight, with the carbohydrate and fat apportioned about equally as to caloric value. This constituted an essentially normal balanced diet. For subject M. O., who weighed 74 Kg., the diet contained 2,960 calories and was made up of 308 Gm. of carbohydrate, 74 Gm. of protein and 150 Gm. of fat. The diet for subject R. U., who weighed 63 Kg., contained 2,520 calories and was made up of 263 Gm. of carbohydrate, 63 Gm. of protein and 142 Gm. of fat. After a week of control observations, the first subject was given 225 mg. of dinitrophenol daily for eleven days, followed by 300 mg. daily for five more days. The second subject was given 225 mg. daily for seven days. The results obtained are presented in the accompanying chart.

The metabolism in M. O. rose from an average control of — 10 per cent to + 30 per cent, or a rise of 40 per cent, by the ninth day of medication with dinitrophenol and remained at this level for the next seven days. In R. U. the metabolism rose from a control of + 5 per cent to + 45 per cent, or a rise of 40 per cent, by the sixth day of medication with dinitrophenol and remained at this level for the next two days.

In M. O., the daily nitrogen intake was 11.8 Gm. and the output varied from 11 to 14 Gm., with an average of approximately 12.8 Gm. throughout both the control and the experimental period. The daily nitrogen intake for R. U. was 10.1 Gm., and the output varied from 8 to 11 Gm., with an average of 10 Gm. throughout both periods. Therefore the dinitrophenol produced no significant changes in nitrogen balance. The organic acids in the urine were constant at about 800 cc. throughout for M. O. and fell from an average of 1,500 to 750 cc. in R. U. during the action of dinitrophenol. Therefore there was no increase in acid bodies in the urine following administration of the drug.

M. O. lost 2 pounds (0.9 Kg.) during the control period and about 1 pound (0.45 Kg.) during the dinitrophenol period. R. U. lost weight similarly. With so short a period of medication with dinitrophenol as one week, the weight changes are not striking. A loss of weight might be expected unless the caloric intake was adequate to provide for the increased metabolism. This would not have been the case if the control diets had been just adequate for maintenance at normal metabolic levels, as planned. However, since the water intake and the activity of the subject were not controlled, it is possible that considerable changes in the daily weights might occur from these factors. The

3. Peters, J. P., and van Slyke, D. D.: Quantitative Clinical Chemistry, Baltimore, Williams & Wilkins **1**: 270, 1932.

4. Van Slyke, D. D., and Palmer, W. W.: J. Biol. Chem. **41**: 567 (April) 1920.

subjects continued their normal activity during the medication with dinitrophenol, and the only symptoms noted were a feeling of warmth and a tendency to perspire freely.

It may be concluded from the results of experiments on two normal subjects on a normal balanced diet that a 40 per cent increase in metabolism caused by dinitrophenol did not significantly modify the nitrogen or acid-base balance or cause unpleasant symptoms.

HIGH CARBOHYDRATE DIET

In the second experiment, the carbohydrate of the diet was increased to the limit of palatibility while the basal protein need of 1 Gm. per kilogram and the total caloric intake were left unchanged. This resulted in a reduction of the dietary fat to a minimum. For M. O., who weighed 74 Kg., this diet contained 2,960 calories and was made up of 533 Gm. of carbohydrate, 74 Gm. of protein and 50 Gm. of fat. For P. O., who weighed 61 Kg., the diet contained 2,440 calories and was made up of 460 Gm. of carbohydrate, 61 Gm. of protein and 40 Gm. of fat. After a week of control observations, M. O. was given 300 mg. of dinitrophenol daily for seven days and P. O. 225 mg. daily for seven days. The results obtained are presented in the chart.

The metabolism of M. O. rose from a control value of — 15 per cent to + 10 per cent on the third day, and to + 25 per cent, or a total of 40 per cent, on the seventh day of medication with the drug. In P. O. the rise was from a control value of — 5 per cent to + 50 per cent on the fifth day, and + 45 per cent on the seventh day, or a maximum increase of 55 per cent. The daily nitrogen intake for M. O. was 11.8 Gm.; the output varied from 9.5 to 13.5 Gm., an average of 12 Gm. for the two weeks. The daily intake for P. O. was 9.7 Gm.; the output varied from 6.5 to 10.5 Gm., averaging 8.8 Gm. during both control and test weeks. Thus there was no significant change in the nitrogen balance of the control and test periods. In both subjects the urinary organic acids varied between 500 and 2,000 cc. a day with no significant difference between the control and the test periods. This showed that the formation of acid bodies did not increase during the administration of the drug. M. O. lost 1 pound (0.45 Kg.) during the control period and 5 pounds (2.3 Kg.) during the medication with dinitrophenol. P. O. had an average weight of 1 pound less during the medication period than during the control period. The results in M. O. were particularly interesting, since they showed a significant weight loss without any commensurate increase in nitrogen output. This presumably indicated that the weight loss was not due to tissue destruction but to combustion of the fat or carbohydrate of the body. Subjectively, the patients felt warm and perspired easily during the medication period, but otherwise they felt quite normal.

On the whole, this experiment demonstrated that even when a maximal amount of carbohydrate or minimal fat was present in the diet the usual increase in metabolism could be produced without disturbing the metabolic functions studied or causing undesirable symptoms.

HIGH FAT DIET

In this, or the third, experiment, the dietary fats were increased to the limit of tolerance and the carbohydrates correspondingly reduced, in order to keep the caloric intake constant and the protein at 1 Gm. per kilogram of body weight. For P. A., who weighed 75 Kg., the total calories were 3,000; the carbohydrate intake was 105 Gm., the protein 75 Gm. and the fat 253 Gm. The diet of R. U., who weighed 63 Kg., contained 2,520 calories and was made up of 90 Gm. of carbohydrate, 63 Gm. of protein and 212 Gm. of fat. After a week of control observations, both subjects were given 225 mg. of dinitrophenol daily for seven days. The results are presented in the chart.

The metabolism of P. A. rose from a control value of — 15 per cent to + 15 per cent on the fifth day, and to + 35 per cent, or an increase of 50 per cent, on the eighth day after medication was started. In R. U., metabolism rose from a control value of 0 per cent to values of + 40 per cent on the sixth day and of + 30 per cent on the eighth day. The nitrogen intake for P. A. was 12 Gm. daily and the output varied from 8.5 to 15.5 Gm. during the control period, and from 10 to 14.5 Gm. during the medication period. The average of the values for nitrogen output during the control period was 12 Gm. and during the medication period 13 Gm. The differences were too small to be of significance in view of the daily variations present. R. U. showed more definitely that the nitrogen balance was maintained. Here the intake level was 10.1 Gm. and the output varied from 6.5 to 11.5 Gm. a day, averaging 10 Gm. during both the control and the medication period. The urinary organic acids showed an average of 750 cc. a day during both weeks for P. A., and 500 cc. during both weeks for R. U., again without evidence of increased acid-body production. The weights of both subjects varied considerably during the control period, but both lost 3 pounds (1.4 Kg.) during the medication with dinitrophenol. The subjects were free from pronounced symptoms, even when their basal metabolism was maximally elevated, as in all previous experiments. There was only a moderate feeling of warmth and some increased fatigability on exertion.

Thus, dinitrophenol was effective in increasing the metabolism, without disturbing the basic metabolic processes studied, although the subjects ate a diet containing an abnormally large amount of fat and a minimal amount of carbohydrate.

HIGH PROTEIN DIET

In the fourth experiment, the caloric value of the diets was maintained at 40 calories per kilogram, but the protein was increased to 1.7 Gm. per kilogram of body weight. Carbohydrate and fat were apportioned as in a balanced diet. The diet for P. A., who weighed 75 Kg., contained 3,000 calories: 300 Gm. of carbohydrate, 125 Gm. of protein, and 133 Gm. of fat. The diet for P. O., who weighed 61 Kg., contained 2,440 calories: 250 Gm. of carbohydrate, 100 Gm. of protein and 115 Gm. of fat. After a week of control observations, both subjects were given 225 mg. of dinitrophenol daily for seven days. The results are indicated in the chart.

The metabolism of P. A. rose from a control value of — 15 per cent to + 12 per cent, or a rise of 27 per cent, on the third day of medication and remained at that level. The metabolism of P. O. rose from + 10 per cent to + 50 per cent, or an increase of 40 per cent, by the fifth day of medication and remained at that level during the two remaining days of that period. The nitrogen intake for P. A. was 20 Gm. a day, but the output never reached this level. During the control period it rose to nearly 18 Gm. a day but averaged only 16.5 Gm. during the medication period. Likewise, the output of P. O. did not approach the intake level

of 16 Gm. a day until the end of the experiment, rising constantly to the end. It appears that on a high protein diet the nitrogen balance may remain positive, at least during the first week of medication with dinitrophenol. The urinary organic acids were remarkably constant throughout. In both subjects there was little variance from a value of 750 cc. a day during the control and medication periods, again showing no tendency to acidosis. Although there was some variation in body weight, the two subjects did not lose more than a pound each during the medication with dinitrophenol. The symptoms were the same as those of the other diets discussed.

Thus, when protein formed an unusually large part of the diet, the increased metabolism of dinitrophenol did not disturb the basic metabolic processes of the body and caused no unpleasant symptoms.

COMMENT

Elevations in basal metabolism caused by dinitrophenol of between 27 and 50 per cent and persisting for periods of from seven to sixteen days were studied in subjects on controlled diets. The diets were all adequate as to caloric content on the basis of a normal metabolic rate, containing 40 calories per kilogram of body weight, but were abnormal in that they contained a maximal tolerated amount of carbohydrate, fat or protein. A normally balanced diet was also used for comparison. Such diets represented the extremes likely to be encountered in the dietaries of patients receiving dinitrophenol.

Dinitrophenol, used in doses of therapeutic range, caused increases in metabolism of the usual magnitude irrespective of the type of diet. The nitrogen excretion was never greater than the intake, even when the subjects lost as much as 5 pounds in body weight during one week. From this it seemed probable that there was no actual tissue breakdown during these short periods of heightened metabolism, but that the loss of weight was due to the utilization of stored carbohydrate or fat. This does not mean, of course, that tissue breakdown would not occur if the drug should be given over longer periods, but probably when materials other than protein are available these are utilized first. Thus the assumption might be made that, as long as the protein intake is adequate, any reduction in body weight is not primarily at the expense of the tissue proteins. The failure to demonstrate any change in the amounts of acid bodies in the urine indicated that the fat burned was consumed completely and did not tend to cause an acidosis.

These results indicate that dinitrophenol may be administered to patients on special dietary regimens over short periods without interfering with the usual metabolic effects of the drug. Therefore, dinitrophenol would seem especially useful in obesity, in which, through burning of the stored fats, a reduction in body weight might be obtained. This reduction would be accompanied by a minimal destruction of body tissue, since there was no demonstrable increase in the nitrogen output. Also, because of the absence of unpleasant subjective symptoms, dinitrophenol might be valuable for increasing the depressed metabolism of various disease states. Thus, the palpitation and anxiety that often follow the administration of thyroid in sensitive patients might be avoided. This does not mean, however, that dinitrophenol can entirely replace thyroid, for there may be actions of this gland necessary or useful to the body, in addition to its power of increasing metabolism.[5] In a later paper, we expect to discuss a number of actions of thyroid not possessed by dinitrophenol.

It may be added here that no demonstrable side actions have been observed in the human subjects reported in this paper under these adverse dietary conditions. However, among a large group of patients under observation in the Stanford clinics and from reports of physicians who have tried dinitrophenol, there would seem to be an incidence of something like 5 or 6 per cent of dermatitis. Such a reaction occurs with many other drugs and promptly disappears on withdrawal of the drug. As for other side actions, such as those resulting from renal or hepatic functional injuries, nothing definite has been demonstrated thus far by us, but observations along these lines are being continued and will be reported later.

CONCLUSIONS

1. The effects of alpha-dinitrophenol (1-2-4) on basal metabolism, nitrogen balance, urinary organic acids, and body weight were studied in subjects on balanced diets and on diets unbalanced by including maximal amounts of carbohydrate, fat or protein. The dinitrophenol was administered by mouth for periods of from seven to sixteen days. The caloric values of the diets were adequate for the normal metabolism of the subjects.

2. With the use of these diets, the basal metabolism was increased by from 30 to 50 per cent during medication with dinitrophenol.

3. The subjects excreted less nitrogen than they ingested, yet there were definite losses of body weight. Therefore, body proteins probably were not broken down. The output of urinary organic acid was not increased, thus indicating that the fats were completely burned without giving rise to acidosis.

4. Accordingly, dinitrophenol may increase metabolism in man, regardless of the energy materials of the diet, although it primarily promotes burning of carbohydrates or fat, at least during short periods, such as those used in this study and on diets of adequate caloric value.

5. Clinically, dinitrophenol is indicated in treatment for obesity and may be therapeutically useful in other disease states with depressed metabolism. Its main advantages over thyroxine or powdered thyroid would seem to be a prompt and vigorous rise of metabolism and an absence of disturbing subjective symptoms. Its use appears to be relatively safe for as long periods as have been studied so far.

Sacramento and Webster streets.

5. Cutting, C. C., and Tainter, M. L.: Proc. Soc. Exper. Biol. & Med. **31**: 97 (Oct.) 1933.

The Way the Patient Lies in Bed.—The fixed rigidity of meningitis is easy enough to recognize in the advanced case. Its early recognition in a case of obscure fever and headache or in subarachnoid hemorrhage may require the cooperation of the hands, but the decision to make the further test is often prompted by the appearance of unwillingness in the patient to move his head from the pillow. The adoption of the knee-elbow position by a rheumatic child may be the first sign of pericarditis. Gull once surprised an anxious mother by telling her that her daughter with typhoid fever would recover before he had entered the sickroom. He had seen her sitting up in bed as he passed the door.—Ryle, J. A.: The Training and Use of the Senses in Clinical Work, *Guy's Hosp. Gaz.* **47**:421 (Oct. 28) 1933.

PERSISTING ERRORS IN THE TECHNIC OF ORAL CHOLECYSTOGRAPHY

A PROCEDURE DESIGNED TO AVOID THEM

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A prevalent belief that the intravenous method of cholecystography is consistently and definitely superior to the oral method in diagnostic results has stimulated me to reiterate my own convictions to the contrary and to recount certain rather common errors in the oral technic which may foster the opinion that it is less reliable than the intravenous method. For a long time I accepted the view that the intravenous method was somewhat more trustworthy, although I preferred to give the dye orally as a routine and reserved the intravenous test for cases in which the oral was indecisive. However, with added experience and the adoption of an appropriate oral technic I have become thoroughly convinced that, when the oral method is properly executed, its efficiency is equal to that of the intravenous method and that adverse comparisons of the two methods are usually based on results derived from faulty oral technics.

Now it should be obvious that, to employ the oral test effectively, the dye must be given: (1) in sufficient quantity, (2) in readily absorbable form, (3) in such a manner that it will not produce undue nausea or purgation, and (4) under conditions that will not hamper its evacuation from the stomach, its absorption from the bowel or its accumulation and concentration in a normal gallbladder.

From repeated trials with varying amounts I have found it best to give sodium tetraiodophenolphthalein (tetiophthalein), the compound almost universally employed, in a uniform dose of 4 Gm. to adults. This is reduced for children in proportion to weight, but I have not found it necessary to vary the dose for small or large adults. If an amount considerably less is given the shadow of the gallbladder is likely to be faint or absent, and considerably larger doses tend to produce vomiting or purging or shadows of excess dye in the bowel which may obscure the gallbladder.

During the experimental stage of oral cholecystography, roentgenologists soon discovered that when the compound was administered in pills or capsules the masses often were not dissolved, and thus the test was vitiated. Even when the capsule or pill coating dissolved, the acid gastric juice, especially that of a fasting stomach, often combined with the exposed drug to form a viscid envelop which retarded or prevented breaking up of the mass. Thus the advantage of giving the compound in solution soon became evident, and this method is now generally employed. If the drug is dispensed in aqueous solutions, they should be freshly prepared. It has been my observation that solutions more than twenty-four hours old are likely to produce nausea.

Next in importance to assuring absorbability of the dye is to give it in such a manner that it will be palatable and well borne by the stomach. Many persons tolerate the dye in simple aqueous solution, but others find its taste disagreeable or are subsequently nauseated. Both of these objections can be largely overcome or greatly mitigated by mixing the solution with a glassful of fruit juice or carbonated water. Grape juice is widely used, and I place it first on the list from which the patient may choose.

But it is not sufficient merely to disguise the taste of the dye and dilute it with an agreeable beverage, for even when thus taken on an empty or partially empty stomach, nausea and vomiting occur too often. Hence it is the more common practice to give it in association with a meal, although customs vary as to the quantity and character of the meal and the relative time at which the compound is taken. It seems to me that the significance of these factors is not appreciated as fully as it should be. After extended trials with meals different in amount and composition, and directing the compound to be taken at different times in relation to the meal, I have settled on the fixed routine of requiring the patient to take a full meal containing a minimum of fat and follow it immediately with the dye. This is, in my opinion, the most important factor in oral cholecystography.

The element of fat in the meal deserves especial consideration. More than one examiner has been interested in the plausible hypothesis that by including a substantial amount of fat in the meal the gallbladder would be emptied and thus rendered favorable for reception of the subsequently secreted dye-laden bile. In my hands, however, a faithful trial of this procedure resulted in a marked increase of positive diagnostic errors arising from faintness or absence of the shadow when the gallbladder was normal. Apparently the fat stimulates emptying of the gallbladder during the time when filling should occur. Since fat retards evacuation of the stomach, retarded absorption of dye by the bowel may follow. Delario[1] has shown by experiments on animals that fat renders insoluble a greater amount of the dye in the small bowel. Whatever the reason, I am certain that much fat in the meal will lead to a high proportion of mistakes in diagnosis.

The possibility that physiologic variations in absorption of dye by the bowel might lead to erroneous cholecystographic interpretations is still frequently mentioned, and at the beginning I had this apprehension. Repeatedly it has been emphasized that by the intravenous method a constant amount of the compound is put directly into the blood, whereas by the oral method the amount absorbed might vary so widely as to affect the reliability of the test. Yet I have not noted a single instance in which absence or faintness of the gallbladder shadow could reasonably be attributed to deficient absorption from physiologic causes, provided no disturbing factor was introduced by the manner in which the compound was administered.

To avoid interference with absorption of the dye or with its entrance into and concentration by the gallbladder, purgatives, especially castor oil, and other medicines which affect the intestine or biliary organs should not be taken by the patient during or shortly prior to the examination. Before cholecystography made its advent, purgation was often employed to prepare the patient for roentgenography of the gallbladder, and a few examiners persist in such preparation for cholecystography. It is desirable to cleanse the large bowel, but this is best effected by having the patient employ enemas on the morning of examination.

The facts and opinions recited are not novel or peculiar to my experience. Indeed, most of them were first pointed out by other roentgenologists, and all have

From the Section on Roentgenology, the Mayo Clinic.
Read before the Section on Radiology at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 15, 1933.

1. Delario, A. J.: Paths of Absorption and Excretion of Sodium Tetraiodophenolphthalein, J. Lab. & Clin. Med. **16:** 329-340 (Jan.) 1931.

received wide publicity. Nevertheless, oral technics continue to be exceedingly diverse, and in many instances they violate one or more principles which seem essential to me. Many examiners still give the dye in forms that hinder its absorption, prescribe it in inadequate doses, direct it to be taken with a light meal or with one containing an excess of fats or several hours after the meal, or precede the examination with a purgative. Such lapses are often naively mentioned by sincere critics of the oral method and undoubtedly account for the disappointing results obtained. Any comparison of the two methods under these circumstances is bound to be inconclusive and inequitable. Further, I feel that, by closer attention to the details described, some of the practitioners of the oral method would be rewarded by a surprising increase in its efficiency. It is to be conceded that rigid standardization of methods retards progress, but neglect to profit from past mistakes is equally hampering.

then cease breathing during the exposure. Voltage is proportioned to the patient's thickness, and the entire setting is equivalent to that which will exhibit details of bone structure. A constant target film distance of 26 inches (65 cm.) is employed, and the exposure time varies from one-half to one second.

When the first set of roentgenograms is developed, it is inspected so that technical errors can be corrected. If the shadow of the gallbladder is obscured by gas, the technician massages the abdomen to displace the gas or requires the patient to repeat the enema. If the shadow is partly hidden by the ribs, subsequent cholecystograms are made after inspiration and arrest.

The efficiency of this routine is exemplified in the results of the work during 1932. Of 4,676 patients examined, 732 were operated on, and the cholecystographic diagnosis, whether positive or negative, was confirmed in 696 (95.0 per cent). Among 287 patients with normal cholecystograms, who were operated on chiefly for diseases other than that of the gallbladder,

Cholecystographic Data for 1932

Diagnosis	Observations at Operation									Diagnosis Confirmed at Operation, per Cent
				Cholecystitis						
	Cases	Gallstones	Tumors	Not Graded	Grade 2	Grade 3	Grade 4	Miscellaneous	Normal	
Normally functioning gallbladder	287	4	2	19	4	..	1	..	257	89.5
Poorly functioning gallbladder	39	28 (71.8%)	..	5	..	1	2	1	2	94.8
Nonfunctioning gallbladder	166	90 (84.9%)	3	4	3	..	2	1	3	97.1
Normally functioning gallbladder with stones 124										
Poorly functioning gallbladder with stones 78	294	292	1	..	..	..	..	..	...	99.6
Nonfunctioning gallbladder with stones 92										
Tumor	6	...	6	..	..	..	..	..	...	100.0
Total	732	415	12	28	7	1	5	2	262	

445 cases with positive cholecystographic data; 6 errors (98.6 per cent correct). Of 732 diagnoses, 696 (95.0 per cent) were confirmed

415 cases with gallstones at operation; 411 (99.0 per cent) with positive cholecystographic data. Of the 415 cases, gallstones were visualized and reported in 294 (70.8 per cent)

470 cases with disease of the gallbladder at operation; positive cholecystographic data in 440 (93.6 per cent)

262 cases without disease of the gallbladder at operation; negative cholecystographic data in 257 (98.0 per cent)

At the Mayo Clinic for more than three years we have applied a routine which conforms to the foregoing principles. Reactions in the way of vomiting or distressing purgation have been few and in no case alarming. During the last year employment of the intravenous method was not deemed necessary in any case, and whenever reexamination was required the oral routine was repeated. Details of the procedure are as follows:

The patient receives 4 Gm. of sodium tetraiodophenolphthalein dissolved in 30 cc. of distilled water and is given the following printed instructions: "(1) At 6 p. m. eat supper of usual amount, but without eggs, cream, butter or other fats; (2) immediately after supper, empty the entire contents of this bottle (the dye) into a glassful of grape juice, stir well and drink all; (3) do not take a laxative or any other medicine; (4) at 7 o'clock next morning take a rectal injection of warm salt solution until the water returns clear, and (5) do not eat breakfast; you may drink water, black coffee, or clear tea."

Cholecystograms are made at the fourteenth and the sixteenth hour after the dye is taken, and again at the twentieth hour after the patient has taken a glassful of milk and cream in equal parts with his lunch.

For roentgenography the patient is placed in a comfortable position prone on the table, which is equipped with a flat Potter-Bucky grid. He lies with his cheek to the pillow, his arms forward and his ankles supported by a cushion. To secure thorough immobilization, a broad canvas band is drawn tightly over his back. He is required to exhale deeply and

surgical exploration confirmed the cholecystographic diagnosis in 257 (89.5 per cent). It is well known that the highest percentage of errors is caused by diseased gallbladders which maintain their function sufficiently to produce a normal shadow. The percentage of errors in such groups would probably be increased if the intravenous method were superior in eliciting shadows of functioning gallbladders. Of 445 patients with positive cholecystographic data, 439 (98.6 per cent) had cholecystic disease. It is precisely in this group that skeptics of the oral method would expect a high ratio of errors. Gallstones were found at operation in 415 cases; 411 (99.0 per cent) yielded positive cholecystographic data and the gallstones were diagnosed as such in 294 (70.8 per cent). In six cases in which a diagnosis of tumor of the gallbladder had been made the diagnosis was confirmed, but papillomas were also found in a few cases in which this specific diagnosis had not been made.

The personal equation was scarcely a factor, for many of the interpretations were made alternately by three of my associates in the section, and I attribute these results chiefly to our specific routine. Until such percentages have been surpassed by the intravenous method, I shall continue to apply and recommend the oral method.

ABSTRACT OF DISCUSSION

DR. WALTER L. PALMER, Chicago: The accuracy of the oral method as carried out at the Mayo Clinic seems to compare most favorably with that obtained by the intravenous technic employed in other institutions. In a series of 2,000 intravenous cholecystographies reported about three months ago by Dr. Ferguson and myself from the University of Chicago Clinics, the accuracy was not as great as that described today. During the past year we have been using the oral method and are quite satisfied with the results obtained, although they are not as good as Dr. Kirklin has reported. The oral method has two important advantages: First, it is simpler and less expensive and, second, the reactions are less frequent and less severe. Now that it has been shown to be as reliable as the intravenous method, there would seem to be little reason for continuing to use the intravenous technic. Dr. Ferguson and I attempted a clinical evaluation of cholecystography. We found that the roentgen demonstration of stone was practically 100 per cent accurate. A normal visualization seemed to us to be more reliable than has been indicated in the present report. This discrepancy may be due to a difference in interpretation. In 287 cases of normal visualization, Dr. Kirklin reported finding stones or tumor in only 6 and cholecystitis of varying grades in 24. Considerable difference of opinion exists as to the pathologic diagnosis of cholecystitis. It is possible, according to our conception of cholecystitis, that we should have classified some of these as normal gallbladders. This might account for our attributing a higher accuracy to a normal visualization. A nonfunctioning gallbladder was found by us to be indicative of cholecystic disease in about 90 per cent of our cases when it was accompanied by a history of colic, but the accuracy was much less when there was no clinical evidence of gallbladder disease. Dr. Kirklin reports an accuracy of 97 per cent entirely irrespective of the clinical picture. From the clinical standpoint it is well to recognize that stones may be present in what appears to be a perfectly normal gallbladder roentgenologically and, conversely, that a poorly functioning or a nonfunctioning gallbladder may be perfectly normal. The final diagnosis, in my judgment, must be based on both clinical and roentgenologic evidence. I should like to ask Dr. Kirklin how frequently he finds reexamination advisable, and just what he considers to be the indications for it.

DR. ADOLPH HARTUNG, Chicago: I should like to ask the author whether he makes any attempt as a routine to make an opaque meal examination in connection with the dye test. Before the dye test was used as frequently as it is now, a good deal of reliance was placed on the secondary gastrointestinal examination in connection with gallbladder disease. Since that time most of these cases, I believe, are not checked up by such an examination. In quite a large number of cases in which the dye test was made as a routine procedure, the results were negative and an opaque meal was given for secondary signs. It seems to me that the percentage of error, especially in the cases of cholecystitis, might be brought down considerably by checking up in some way such as this. I have found in connection with normal gallbladder shadows that the meal gives some of these secondary signs, either functional or organic, indicating adhesions or gallbladder disease, so that the percentage of error could be brought down materially.

DR. PAUL C. HODGES, Chicago: Until a few years ago I used the intravenous method almost exclusively, but one or two serious accidents with it caused me to change to the oral method. I supposed that the change was temporary until the difficulties could be overcome with the intravenous injection; but, as so frequently happens, I have drifted along into a permanent arrangement without being particularly careful to be sure that the oral dye was being given in the best possible fashion. From what Dr. Kirklin says, it is obvious that I have been making some mistakes. He uses 4 Gm. of dye, and I have been giving only 3 Gm. He takes pains to put the patient in a comfortable position and has him suspend respiration in the expiratory phase. I have not paid much attention to the patient's comfort and have had him hold his breath on inspiration. Dr. Kirklin has the patient reach up and hold his own nose, which I suspect is a very helpful maneuver in assuring suspended respiration. I have had an attendant hold the patient's nose in particularly difficult cases, but I do this as little as possible because I don't like to expose the attendants to the rays. The importance of complete immobilization cannot be overemphasized, and so Dr. Kirklin's efforts directed to that end are of great practical importance. I have had a little experience with rapid stereoscopic exposures made with the patient standing in front of a vertical casette changer, a Lysholm stationary grid interposed between him and the film. Films of this sort hold great promise. I should like to know whether Dr. Kirklin is using the pure dye or one of the commercial preparations containing a vehicle and flavoring matter.

DR. H. A. OLIN, Chicago: I think that I have had better success using the pure salt and dissolving it in water and mixing it with grape juice. In the event that the patient is unable to take grape juice, I use any fruit juice, because it is the acid in the fruit juice that precipitates the salt, which is redissolved when it enters the duodenum. Recently I have been interested in the complication of diarrhea. It occurred to me that giving camphorated tincture of opium with the dye would overcome this objection. I think that in the controversy about oral and intravenous methods one important matter has been overlooked, and that is the chronically inflamed gallbladder, which is out and out clinically a surgical case. I think that Graham's appreciation of the use of the liver test combined with the salt should not be overlooked. That is called iso-iodeikon (phentetiothalein sodium) and I suppose it is as familiar as iodeikon (sodium tetraiodophenolphthalein). By ascertaining the liver index one is able to obtain the amount of liver damage and the degree of operative risk many days prior to operation. I agree with Dr. Kirklin that the fat meal is of decided advantage, especially to show when the gallbladder is almost completely empty or partially empty. Last month I observed three gallbladders which appeared normal in a cholecystogram. These were three strawberry gallbladders, and I should like to ask Dr. Kirklin whether he has had a similar experience.

DR. B. R. KIRKLIN, Rochester, Minn.: I have reported only cases which have been checked pathologically with the exception of those cases in which the operation was for other abdominal conditions and the gallbladder was merely palpated or inspected and determined to be normal and therefore not removed. Some one has asked regarding the indications for reexamination and what percentage of the cases are reexamined. The indications for reexamination are unsatisfactory films or any doubt that the patient has followed instructions. Approximately 8 per cent of the total number of the cases are reexamined; the dye is usually repeated the night following the first examination. In reviewing those cases in which a normal functioning gallbladder has been reported and small stones have been found, it has invariably been learned that the cause of the error has been an attempt to interpret films of inferior quality in that there was movement on the part of the patient or gas in the overlying segment of bowel, which obscured the stone shadows. I feel that if one has satisfactory cholecystograms and the gallbladder is functioning normally, stones can invariably be ruled out. As evidence of the importance of meticulous technic in cholecystography, the percentage of accuracy has increased hand in hand with the improvement in technic. I have not followed the method of examining the stomach and gallbladder on the same day; I prefer to make cholecystograms on the day preceding examination of the stomach, although I can see no reason why they cannot be made the same day. Dr. Hartung mentioned the diagnosis of gallbladder adhesions, which brings up a very important question. I have little confidence in my ability to diagnose gallbladder adhesions. Early in this work I thought I could recognize adhesions by deformities of the gallbladder contour, but I have since learned that there is no relation between adhesions and deformity of the gallbladder wall in cholecystograms, nor does a smooth gallbladder contour rule out adhesions, in my experience. Dr. Hodges has asked what dye is used; for some time I have employed sodium tetraiodophenolphthalein and have found it a most satisfactory preparation. I do not use camphorated tincture of opium as a routine but I can see some advantages in its use. Some one has asked regarding the strawberry gallbladder. I have found that the cholecystograms of an uncomplicated strawberry gallbladder will almost invariably show that it is functioning normally.

STIFF, PAINFUL SHOULDERS, EXCLUSIVE OF TUBERCULOSIS AND OTHER INFECTIONS

EDSON B. FOWLER, M.D.
EVANSTON, ILL.

This article is limited to: (1) the enumeration of a number of terms for stiff, painful shoulders with practically the same clinical syndrome; (2) an analysis of the pathologic changes found in dissections, autopsies and operations; (3) a study of the rôle that rupture of the supraspinatus tendon, capsule and subacromial bursa plays as an etiologic factor; (4) a review of a few cases to emphasize the importance of apparently trivial symptoms, usually overlooked or neglected as unimportant; (5) a brief outline of the essentials of treatment, based largely on a study of 340 shoulders in dissecting rooms; (6) a description of a simplified operation for tendon and capsule repair.

In particular, my purpose is to direct attention to evidence that rupture of the supraspinatus tendon is apparently the primary exciting cause of most "stiff, painful shoulders," and that an early recognition of that fact, with prompt proper treatment, will bring about much earlier and better end-results.

Duplay,[1] three score years ago, described an involvement of the subacromial bursa from trauma, and named this condition "scapulo-humeral periarthritis." Dickson and Crosby[2] used the term "periarthritis of the shoulder" in their recent analysis of 200 cases. And Codman,[3] a pioneer in research work on the shoulder used "rupture of the supraspinatus tendon," believing such a term to be descriptive of a constant part of the pathologic process found in these shoulders. Royal Whitman[4] used the term "stiff, painful shoulders" and "periarthritis of the shoulder" synonymously.

In the evolution of the shoulder from a walking, weight-bearing joint to a weight-carrying one, much strength, stability and durability have been lost. The shoulder joint has the greatest range of motion and the most extensive moving capsule, and, relatively, the glenoid has the smallest, shallowest joint socket. Such a joint is particularly prone to injury, so that it is not surprising that Codman found a complete rupture of the supraspinatus tendon to every twenty shoulders examined, and one incomplete rupture to every third shoulder. In a study of 340 shoulders, my observations were 1 complete rupture of the supraspinatus tendon to every 28 shoulders examined, and 1 incomplete rupture to every 6 shoulders.

The complete ruptures showed much fraying of the tendon and almost no signs of repair, while seventeen of the forty-four incomplete ruptures of the supraspinatus tendon had healed, nearly closing the rupture gap. Had all the incomplete ruptures been immobilized with the arm well elevated, it is my belief that there would have been sufficient approximation in the entire forty-four to result in a satisfactory healing of the damaged tendons and contiguous structures.

Deposits were found in more than a third of the cases of rupture. These deposits were in and about the supraspinatus tendon, as stressed by Brickner,[5] Codman, Moschcowitz[6] and others. It was a significant fact that practically all of the gross pathologic changes found were in and about the ruptured supraspinatus tendon. Furthermore, in the absence of tears of the tendon, practically no degenerative changes, such as fatty, chalky or putty-like deposits, were found. Apparently, rupture was the first link in the chain of pathologic changes.

Dickson and Crosby, "in an effort to elucidate the relationship of trauma, foci of infection and metabolic factors in the etiology," concluded that "there must be some common denominator, which cannot be accounted for at present." In the light of Codman's and my own research, that "common denominator" may be rupture, much or little, of the supraspinatus tendon. The rupture, almost universally overlooked, for reasons to be given later, may be and probably is the primary exciting cause, and inherent structural weakness of the shoulder, a poor blood supply, metabolic factors and foci of infection are secondary, though important, once a rupture has occurred.

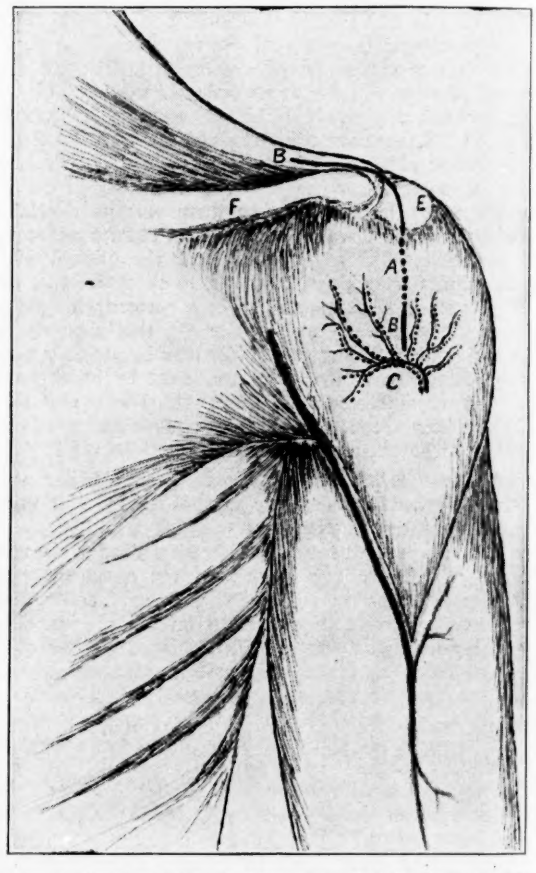

Fig. 1.—Landmarks of the shoulder: *A* (dotted line), the incision for exploratory operation; *B*, extensions of the incision for repair of the capsule and tendon; *C*, the circumflex artery and nerve which lies between the humerus and the deltoid, with branches entering the muscle; *E*, the acromion; *F*, the clavicle.

Codman believes that virtually every rupture of the supraspinatus tendon is caused by contraction of the supraspinatus muscle and that tears are rarely produced by direct trauma. For the most part, I concur

From St. Francis Hospital.

Read before the Section on Orthopedic Surgery at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 16, 1933.

1. Duplay, Simon: Arch. gén. de méd., Paris **2**: 513, 1872.
2. Dickson, J. A., and Crosby, E. H.: Periarthritis of the Shoulder, J. A. M. A. **99**: 2252 (Dec. 31) 1932.
3. Codman, A. E.: Boston M. & S. J. **150**: 371, 1904; **154**: 613, 1906; **159**: 533, 576, 615, 677 and 723, 1908; **164**: 708, 1911; **165**: 115, 1911; **196**: 381, 1927; Surg., Gynec. & Obst. **52**: 579, 1931.
4. Whitman, Royal: A Treatise on Orthopedic Surgery, Philadelphia, Lea & Febiger, 1930.
5. Brickner, W. M.: Am. J. M. Sc. **149**: 351, 1915; Am. J. Surg. **30**: 108, 1916.
6. Moschcowitz, Eli: Am. J. M. Sc. **150**: 115, 1915.

in that belief. Occasionally, a dislocation of the shoulder is accompanied by a tear of the tendon and capsule; for example, two such cases were found in my work, and Wilson [7] reported one case. Other cases are as follows:

One of Wilson's patients produced a complete rupture of the tendon in an attempt to toss a stone up out of a trench. Another was pulling down on a chain hoist; his hand slipped, and in his effort to regain his balance, violent action of the supraspinatus muscle ruptured the supraspinatus tendon.

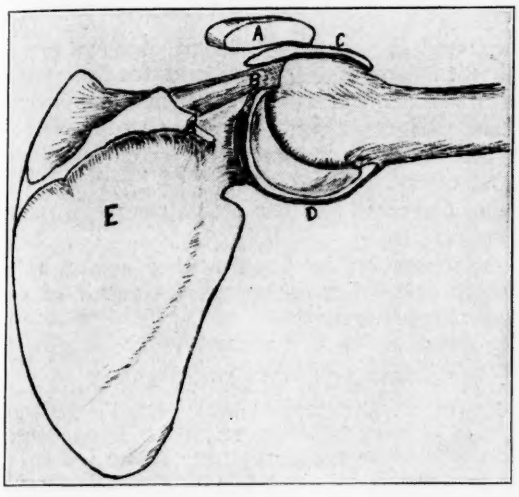

Fig. 2—*AA* represents the section of acromion removed; *B*, the supraspinatus tendon; *C*, the subacromial bursa; *D* the lower portion of the capsule; *E*, the infraspinatus fossa with the infraspinatus muscle and tendon removed.

One of Codman's patients produced a rupture in an effort to recover his balance, when a saddle girth he was tightening suddenly broke.

One of my patients, a middle-aged woman, slipped as she stepped onto an oiled floor. As her feet shot forward, she raised her arms to regain her balance and thus ruptured the right supraspinatus tendon.

Another patient, a young man of 24, not accustomed to hard work, undertook the task of passing up cases of soda pop. After six weeks of this hard labor, which put the supraspinatus tendon to constant strenuous use, he noticed one evening after work a dull, aching pain in the right shoulder. He was unable to resume his work because of pain and disability. When I saw the case six months later there was limitation of abduction with extreme atrophy of the spinatus muscles. A coarse, crunching crepitus was felt about the greater tuberosity as it approached the acromion. Pain and tenderness were present in the same area. It would appear that repeated sprains, i. e., rupture of a few fibers at a time, had occurred till at the end of six weeks the entire tendon was torn from its attachment. In this case, now over two years old, the patient has not been operated on, though Wilson operated in a similar case in which the patient produced piecemeal, by his routine folding of cloth, a complete rupture of the supraspinatus tendon.

Another patient of mine, a middle-aged blacksmith, in starting down to the cellar lost his balance, and in his effort to regain his equilibrium the sudden contraction of the spinatus muscles ruptured his supraspinatus and infraspinatus tendons, making a gap 2 by 2½ inches (5 by 6.3 cm.) through which the head of the humerus appeared at operation.

The history in conditions of the shoulder is of extreme importance, and in taking it, the most painstaking inquiry as to every possible detail from many angles will, with surprising regularity, disclose that there has been a sudden stress on the spinatus tendons or that there has been long-continued overuse.

A surprising and misleading fact is the little or no pain noticed at the time of the rupture, whether the latter occurs at once or piecemeal, as in the cases described. The pain has a sticking or cutting quality and lasts but a moment, so that the incident is usually forgotten. Some hours may elapse before aching and disability set in, dependent somewhat on the extent of the trauma. When there is extensive rupture, few patients complete the day's work. At night the pain is much worse, often preventing or interrupting sleep. On abduction, pain is usually cutting as the arm nears the horizontal, and the patient may drop his arm to the side, owing in part to weakness and in part to pain. Pain is complained of in the deltoid area, and it may radiate up or down. Tenderness is often less marked the first two or three weeks than later. It is usually elicited around the greater tuberosity, particularly proximal to its upper border. In complete rupture of the supraspinatus tendon, well marked atrophy of its muscle has been observed as early as two weeks after the rupture occurred.

Ridlon [8] confessed, "that the difficulties encountered in treatment of injuries to the shoulder joint have always been more troublesome and more obscure than the difficulties in treating all other joints put together." Lovett [9] once said: "No common injury is so badly treated, save possibly the spine, as injuries to the shoulder." Part of the reason for this unsatisfactory treatment would seem to be a lack of recognition of the fact that seemingly trivial trauma may, and frequently does, produce a tear in the structures of the shoulder joint, and that the tear is often accompanied by little or no pain. This lack of recognition has come about, in part, because shoulders are rarely operated on for relief, and painful shoulders, not being fatal, provide no autopsies.

However, because of the astonishing number of ruptures found in routine examination of shoulder joints by Codman and myself, it would seem justifiable, in cases of stiff, painful shoulders not greatly improved in two or three weeks by immobilization in abduction,

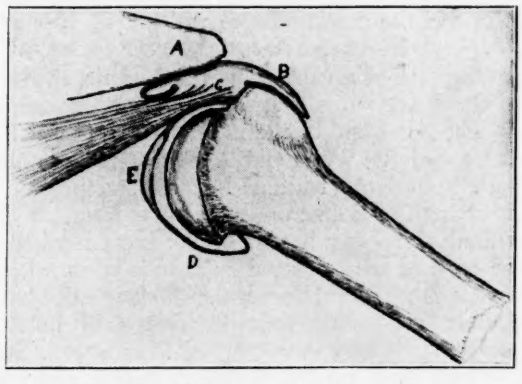

Fig. 3.—*A* is the acromion; *B*, the subacromial bursa; *C*, the partially ruptured and frayed supraspinatus tendon, capsule and subacromial bursa; *D*, the capsule; *E*, the glenoid cavity.

to assume that a rupture has occurred. Of course, along with the local treatment, a careful general examination and treatment of any abnormality, such as diabetes, gout, hyperthyroidism or hypothyroidism and foci of infection, should not be neglected.

In cases where a steady, marked improvement has not occurred during the first three weeks it is my belief that an exploratory operation should be done under

7. Wilson, P. D.: Complete Rupture of the Supraspinatus Tendon, J. A. M. A. **96**: 433 (Feb. 7) 1931.

8. Ridlon, John: Surg., Gynec. & Obst. **54**: 553, 1932.
9. Lovett, R. W.: Surg., Gynec. & Obst. **34**: 437, 1922.

local anesthesia to settle the diagnosis and to insure comparatively early proper treatment.

OPERATION

Step 1 is performed under local anesthesia to confirm or refute the diagnosis; step 2, under general anesthesia to repair the rupture.

1. The exploratory incision starts over the acromion, ¾ inch (2 cm.) back of its tip, and extends distally

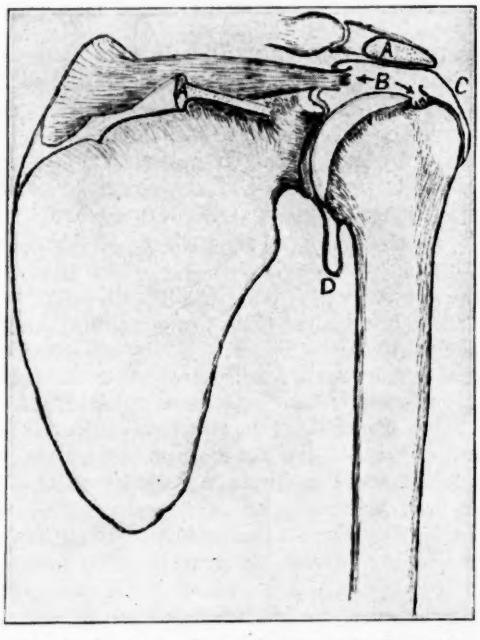

Fig. 4.—*AA* is the sector of acromion removed; *B*, complete rupture of the capsule, subacromial bursa and supraspinatus tendon with wide separation; *C*, the subacromial bursa with a wide opening into the shoulder joint; *D*, the dependent capsule.

2 inches, parallel to the fibers of the deltoid muscle. The deltoid fibers are separated, and the underlying subacromial bursa is opened. If the floor of the bursa is intact there is no rupture, in which event the incision is closed, and the convalescence will not be appreciably delayed.

2. In the case of a rupture needing repair, the second step of the operation is continued under a general anesthetic: The outer end of the incision is extended 1 inch (2.5 cm.) and the inner end 2 inches. The acromion is cut through from without inward, starting ½ inch (1.2 cm.) back of the acromioclavicular joint. A gutter is cut along the upper border of the greater tuberosity, and the edge of the retracted rupture is trimmed, while the clavicle is retracted forward. Through the base of the greater tuberosity four or five drill holes are passed from without, emerging in the gutter. Strong linen or silk on a curved needle is passed from without through hole 1, then through the torn tendon and back through hole 2. A second suture is passed similarly through hole 2, then through the tendon and back through hole 3, and so on, till all the sutures are placed. The sutures are then tied, while the arm is elevated. The bone springs back into place as soon as traction is withdrawn. A few buried sutures are inserted and the skin is closed with a continuous dermal suture. The arm is put up, well abducted, on a light supporting splint for two weeks and then is placed in a sling. The patient is encouraged to use the arm as soon as the soreness from the operation subsides.

SUMMARY

1. Stiff, painful shoulders, periarthritis of the shoulder, subacromial bursitis and rupture of the supraspinatus tendon are not strictly independent entities. They are the links in the chain of pathologic changes found in chronically disabled shoulders.

2. Rupture of fibers of one or both spinatus tendons, with the inevitable injury of the capsule and subacromial bursa, is the beginning of most pathologic processes in the shoulder, which progress needlessly because of hazy diagnosis and poor treatment.

3. The great frequency and abundance of pathologic change found in routine dissection of shoulders indicates that it is largely overlooked and, for the most part, not even suspected in cases of disabled shoulders.

4. Early diagnosis and consequent proper treatment will make operative treatment of incomplete ruptures rarely necessary.

5. Late diagnoses and late operations mean relatively poor end-results.

6. The operation herein described seems to have advantages over other operations for repair of one or both spinatus tendons.

ABSTRACT OF DISCUSSION

DR. EDWIN W. RYERSON, Chicago: Dr. Fowler has done a fine piece of work in his investigation. I have seen very few patients in whom the supraspinatus tendon had been torn. I have seen several old cases in which operation would not have been advisable and have refused to operate. Two weeks ago I saw a boy who had a reasonably recent tear which was easily demonstrable because a little piece of the greater tuberosity had been torn off. I think that operation should be done in this case but I question very much whether the old chronic tears will give good enough results after operation to make it worth while. I have done none in the old cases. The cases presenting the masses of gritty, calcareous matter, either in the supraspinatus tendon or, as I think in some cases, in the bursa, sometimes require operation and sometimes do not

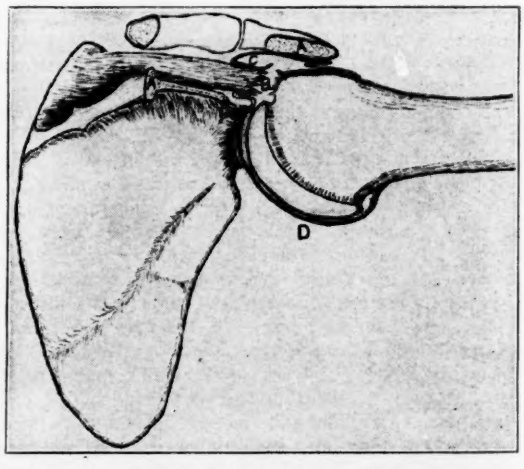

Fig. 5.—*AA* is the sector of acromion removed; *B*, complete rupture (as in fig 4), almost approximated by elevation of the arm; *C*, the subacromial bursa; *D*, the lower portion of the capsule.

DR. F. J. GAENSLEN, Milwaukee: Dr. Fowler has done an excellent service in further elucidating the subject of stiff and painful shoulders. I enjoyed especially his collection of anatomic specimens in the Scientific Exhibit. One cannot but be impressed with the correctness of Dr. Codman's and Dr. Fowler's statements that the injury is of relatively frequent occurrence. I cannot explain the fact that so few cases are seen with marked late disability in the absence of operative repair or adequate conservative treatment at the time of the injury. The gradual fraying of the supraspinatus tendon by repeated

minor injuries, associated with overuse of the arm in abduction, is apparently not unusual, although more severe single traumas undoubtedly are responsible for the majority of actual tears. A few years ago, while I was in Boston with a small group of Wisconsin surgeons, Dr. Codman discussed this problem for us at length. I remember his saying that the diagnosis of bursitis is perhaps no more justified than a diagnosis of peritonitis. Differentiation of the cases into actual rupture, complete or incomplete, calcified deposit in the tendon, or chronic adhesions should be possible in the great majority of cases.

DR. EDSON B. FOWLER, Evanston, Ill.: In regard to Dr. Ryerson's hesitancy to operate in old cases, it is well to state that Codman and Wilson reported old cases. Twenty per cent of the patients were able to resume their former occupations. In 80 per cent the condition was more or less improved and the patients were able to do a variable amount of light work. The operation as performed by Codman or Wilson gives sufficient lysis of the capsule and tendon to permit adequate closure of the rupture gap. In the old cases it is necessary to incise the capsule along the anterior and posterior borders of the tendon, as well as under the tendon where it leaves the capsule. This permits the suture of the retracted structures to the greater tuberosity with a good closure of the rupture gap. Very rarely, deposits are found in the subacromial bursa, as stated by Dr. Ryerson and as found by myself and others. The piecemeal ruptures and associated erosions noted by Dr. Gaenslen are far more common than the sudden complete rupture of the tendon and associated capsule and bursa.

USE OF PHENYLMERCURIC NITRATE IN TINEA AND YEAST INFECTIONS OF THE SKIN

PRELIMINARY REPORT

BENJAMIN LEVINE, M.D.
CLEVELAND

During the past three years, Weed and Ecker [1] reported on two new mercurials showing unusual bactericidal and fungicidal properties coupled with low toxicity for man and animals. Of chief interest and importance was phenylmercuric nitrate.

They studied the effect of phenylmercuric nitrate on twenty pathogenic fungi of man and it was shown that with the exception of Achorion violaceum all the implanted fungi failed to grow in mediums containing 5 and 1 per cent of the saturated solution of phenylmercuric nitrate. Subcultivation on new mediums proved that the majority were killed, since only two (Trichophyton acuminatum and Achorion violaceum) from the medium containing 5 per cent saturated solution of phenylmercuric nitrate grew. However, from the medium containing 1 per cent five subcultures showed growth. They also showed that phenylmercuric nitrate readily killed six strains of wood-destroying fungi. Hatfield,[2] one year later, corroborated the fungicidal value not only of phenylmercuric nitrate but also of phenylmercuric chloride.

The high bactericidal efficiency of phenylmercuric nitrate has also been confirmed experimentally by Birkhaug [3] and clinically by Biskind.[4]

At the suggestion of Dr. E. E. Ecker, the effectiveness of this compound (phenylmercuric nitrate) was studied in the treatment of fungous and bacterial infections of the skin.

From the outpatient department, Mount Sinai Hospital, Cleveland.

1. Weed, L. A., and Ecker, E. E.: J. Infect. Dis. **49**: 440 (Nov.) 1931; **51**: 309 (Sept.-Oct.) 1932; **52**: 354 (May-June) 1933.
2. Hatfield, J.: American Wood Preservers Assn. Annual Report, Jan. 26, 1932.
3. Birkhaug, K. E.: J. Infect. Dis. **53**: 250 (Sept.-Oct.) 1933.
4. Biskind, L. H.: Surg., Gynec. & Obst. **57**: 261 (Aug.) 1933.

FORMS OF MEDICATION

As it was necessary to determine an efficient concentration of the drug for dermatologic use and to find an effective vehicle, a number of mixtures were prepared and employed. The optimum concentration was derived in the following manner: A lotion consisting of phenylmercuric nitrate 1:1,000 in an emulsion of gum tragacanth was used. The product was highly efficient but its continuous application proved to be moderately irritating to the skin, owing either to too great an original strength of the emulsion or to evaporation and resultant concentration. A lotion was then prepared containing phenylmercuric nitrate in a dilution of 1:1,250. This was decidedly less irritating. Application of a simple aqueous solution of phenylmercuric nitrate 1:1,250 by itself produced good results, but the possibility of drying contraindicated its use. Subsequently, an ointment was prepared consisting of equal parts of wool fat and an aqueous solution of phenylmercuric nitrate 1:1,250, the solution being gradually added to the lanolin in the course of emulsification in an electrical mixer. In general, this ointment containing the drug in a concentration of 1:2,500 proved more satisfactory than the lotion. After further experimentation an ointment was made containing the phenylmercuric nitrate in a concentration of 1:1,500 by weight with the addition of 10 per cent of glycerin. This ointment proved to be most satisfactory. A 1:1,000 concentration again proved too irritating for general uses. The ointments found to be most efficient were made with two hydrophilic bases containing cholesterin derivatives. Both these ointment bases containing phenylmercuric nitrate in a dilution of 1:1,500 gave excellent results and showed apparently better penetrating properties. They were unquestionably superior to the ordinary hydrous wool fat preparations.

METHOD OF APPLICATION

The patient was instructed to cleanse thoroughly all affected parts prior to the use of the ointment or lotion. This was done by means of soap and water and a soft brush. A moderate amount of one of the mixtures was gently rubbed into the infected area twice daily, night and morning. Overtreatment was avoided.

NUMBER OF CASES

Of 262 cases studied, 205 were carefully followed up and the patients discharged as cured. The remaining 57 patients were seen but once after the beginning of treatment and the data in these cases remained incomplete. Of the 205 patients, 193 had tineas and the remaining 12 had interdigital saccharomycosis.

INTERDIGITAL SACCHAROMYCOSIS

It has been a common experience among dermatologists to find interdigital saccharomycosis unresponsive to therapy. For this reason special attention was paid to this type of infection, because favorable therapeutic results would here definitely establish the value of the drug. The results obtained with both the lotion and the ointment proved that they were efficient in the treatment of this intractable infection, twelve out of fourteen patients being cured and the other two markedly improved. Occasionally the lotion proved superior to the ointment. The length of time necessary to effect the cure varied from two days to four weeks, with an average of two weeks. One patient, cured in two days, used a lotion in the dilution of 1:1,000.

The outstanding case was that of Mrs. K. K., who had had the infection constantly for twelve years.

During this time she was under continuous treatment with various forms of medication, such as tincture of iodine, 5 per cent aqueous solution of copper sulphate, Whitfield's ointment and an ointment containing oil of cassia, oil of cloves and iodine, without results. Phenylmercuric nitrate ointment 1 : 1,000 was tried and found to be somewhat irritating. A few days later she was given a 1 : 2,000 ointment, which did not irritate. There was a complete cure in two weeks with no recurrence in three months.

Two of the patients had recurrences, one of whom has since been cured and the other of whom is now under treatment. Usually there was complete relief of pain and pruritus after one application.

TINEAS

Of the 193 cases of tineas treated, all were cured. There was a total of 110 patients with tinea of the feet, 21 of whom had a secondary epidermophytid of the hands. In each instance the epidermophytid cleared up promptly, usually before the tinea of the feet was cured. One of the cases of epidermophytid of the hands showed the importance of proper differentiation between the primary infection and the secondary allergic reaction. This patient presented a vesicular scaly eczematoid eruption on both hands of seven years' duration. At no time were the hands free of this eruption, being worse at certain times than at others. Examination of the feet when first presented showed no apparent disease. After three weeks with phenylmercuric nitrate ointment 1 : 2,000 applied twice daily to the hands, there was no improvement. The ointment was discontinued and roentgen therapy instituted. The first treatment caused most of the lesions to regress. Further treatments, however, aggravated the lesions. A total of 2 skin units was given. One week after the last roentgen treatment, when the hands were at their worst, the patient's feet were reexamined. They showed some fissuring and scaling under each of the little toes. The patient was instructed to apply the ointment on her feet only. Four days later her hands and feet were both healed. There has been no relapse in a period of over five months. Similar results were obtained in other cases with epidermophytid or trichophytid eruptions. In each instance the treatment of the primary focus relieved the patient from the secondary eruption.

Twenty patients with tinea of the hands were treated. All of these were cured. They did not show involvement of the feet.

Of the twenty-four patients with tinea cruris, all were cured by the use of the 1 : 1,500 ointment.

Five patients suffered from tinea of the anal region. The outstanding feature was the relief from pruritus noted usually after one application of the ointment. The same is true of pruritus vulvae. However, further investigation of a larger series of these cases is necessary.

E. G., a man, aged 36, had severe pruritus ani due to tinea for the past few years. During this interim he was seen by several physicians, one of whom gave him seven roentgen treatments. Roentgen therapy produced temporary relief lasting from one to four months. He also had used 2 per cent salicylic acid in alcohol and later a modified Whitfield ointment. The latter treatment gave him partial relief only and later no relief at all. When seen, he was exhausted and had lost considerable weight from lack of sleep caused by the severity of the pruritus. The anal region and intergluteal cleft were macerated, excoriated and infiltrated, the process extending down over the perineum to the scrotum. When the patient was seen three weeks later, the tinea was completely cured. The pruritus, he reported, disappeared after several applications of the ointment. There was no recurrence ten months later.

Five cases of tinea of the axillary regions were treated with complete relief. In one case the 1 : 1,000 lotion proved to be superior to the ointment.

Tinea circinata of the glabrous skin presented an interesting series. Twenty-one cases were studied occurring between the ages of 1 and 60 years. The most interesting case was that of Mrs. W., who had a generalized tinea corporis of seven or eight years' duration. A large variety of ointment and roentgen therapy had been used to no avail. The x-rays were used to the extent that it was feared that any further irradiation might cause an atrophy. Within three weeks the patient was completely cured by a 1 : 1,250 lotion of phenylmercuric nitrate. Another patient showing an extensive tinea circinata of the arms and legs responded more readily to the lotion than to the ointment. Most of the patients were treated with the ointment. The time necessary to effect a cure varied from three days to one month; as a rule, ten days was sufficient.

Tinea versicolor responded more favorably to the lotion than to the other preparations. All six cases seen cleared up with the lotion in the dilution of 1 : 1,000. As a rule, this type of tinea responds in from three to seven days.

So far, the number of cases of tinea of the scalp and face treated with phenylmercuric nitrate are too few to justify any definite conclusion. One case of tinea of the scalp was cured after two or three months of treatment. Four other patients, on returning at the end of one week, showed definite improvement. One case of tinea barbae was cured in ten days.

The majority of our cases were gathered from the dispensary and a considerable number of cases consisted of physicians and their families. It was among these that the most startling and satisfactory results were obtained because of more intelligent and consistent use of the drug. Many of our dispensary patients obtained relief and failed to return, while others used the drug spasmodically. These facts also account for the longer duration of the treatment in these cases.

It is necessary to point out that occasionally patients sensitive to mercury are encountered who receive mercurial burns from this treatment. All those seen in this series (seven) were readily relieved by the use of a bland ointment.

CONCLUSIONS

1. In a series of 262 cases of tinea and yeast infections of the skin, phenylmercuric nitrate in ointment or lotion form was used. Two hundred and five cases were cured; the remaining fifty-seven cases were definitely improved but these were not followed to completion of treatment.

2. Phenylmercuric nitrate proved highly efficacious in the treatment of these cases, producing cures when other standard medicaments had failed.

3. In the great majority of cases, no untoward results have been seen from its continued use. In the occasional

cases in which irritant effects occurred, these cleared up readily on withdrawal or on substitution of a less concentrated mixture.

4. All the phenylmercuric nitrate used in this series of cases was prepared by Dr. Ecker and conforms to his specifications.

5. Phenylmercuric nitrate is presented as a distinct contribution to the dermatologic armamentarium.

TUBERCULOSIS AMONG NEGROES

SOME OF THE PROBLEMS THAT COMPLICATE ITS CONTROL

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A comprehensive review of the literature dealing with tuberculosis among Negroes, and conferences with many of the outstanding men who are interested in this problem, indicate that control measures are complicated by a lack of definite information on several points of fundamental importance, which often reveals itself in a multitude of conflicting opinions.

The present status of knowledge on several of these points will be briefly discussed in the light of recent contributions, consideration being given to the extent to which control measures appear to be handicapped by lack of definite information.

DO NEGROES HAVE A RACIAL LACK OF RESISTANCE AGAINST TUBERCULOSIS?

A vast amount of literature has been written on whether Negroes have a racial lack of resistance against tuberculosis. In general, it may be said that the majority of authors are of the opinion that they do, but many publications, particularly those of former years, appear to be based on conjecture rather than fact. Within the past year, three very interesting contributions have appeared dealing with this racial factor.

In view of Bogen's statement that "an investigation of the fate of a group of patients known to have been already infected with the tubercle bacillus and living under approximately similar conditions may shed some further light upon the problem of racial susceptibility to the disease," special interest attaches to a study by Dr. Taliaferro Clark of some 6,000 hospitalized veterans, a group somewhat removed from the cloud of economic conditions and in which he believes the two races are economically equal. The study showed that "upon final disposition of the cases admitted while the disease was in a moderately advanced stage, 50 per cent of the colored and 70 per cent of the white patients showed improvement, quiescence, arrest or apparent arrest, while 39 per cent of the colored as compared with 17 per cent of the white patients died while in hospital." Dr. Clark points out that while in these economically equal groups the Negro death rate is double that of the white, in unselected population groups it is usually three or four times as high. His conclusion is that "the race factor is working in combination with the economic one against the Negro."

Pinner and Kasper, reiterating that "probably the only definitely established fact about immunity is the diminution of spread in a sensitized organism as compared with a nonsensitized one," proceed to show from postmortem examination of 303 Negroes and 219 white patients dead of tuberculosis that:

1. Hematogenous spread occurs twice as often in Negroes as in white persons.

2. Spread by way of the lymphatics occurred nearly seven times as frequently in the Negro as in the white group, whereas isolated phthisis was present in nearly half the white patients and in less than 3 per cent of the Negroes.

These authors, while recognizing the fact that environmental conditions are one of the most important factors causing the high incidence of tuberculosis among Negroes, believe that there is also a true racial difference.

Dr. F. C. S. Bradbury, in his investigation of incidence of tuberculosis in certain Tyneside districts, found a greater incidence of tuberculosis in the Irish than in the English. Even when such factors as poverty, overcrowding and large families were controlled, he concluded that "there is evidence of a racial factor which is responsible in part at least for the relatively high incidence of tuberculosis in the Irish."

Now just what do the various authors mean by a racial factor? Clark and Bradbury are not specific on this point. Pinner and Kasper have in mind a true genotypic difference (anatomic or physiologic). Most of the earlier authors and many of the more recent ones, however, when they refer to a racial factor, mean, to quote Graudy, for example, "the result of the Negroes' relatively short period of contact with tuberculosis." As Reuter points out, lack of experience with a disease is a historical and not a racial or biologic fact. Race has nothing to do with it, since two groups of the same biologic ancestry would show similar relative differences in immunity to a disease if through a series of generations one had been exposed to its selective efforts and the other isolated from its attack.

It would appear, then, that while conclusive proof is lacking the weight of opinion and evidence indicates that in addition to his environmental and economic handicaps the Negro has a lack of resistance to tuberculosis, which may be due to a true biologic difference or merely a present expression of unlike historical experience.

While accurate information as to this lack of resistance would be of the utmost interest, it would probably have but little effect on control measures. To change the anatomy or physiology of the Negro would be a difficult undertaking, and only time can correct his lack of historical experience. In the meantime, however, the importance of his environmental and economic handicaps is universally recognized, and this must obviously be the point of attack.

WHAT IS THE MOST EFFECTIVE TUBERCULOSIS CONTROL PROGRAM FOR THE SOUTHERN STATES WITH THEIR LARGE NEGRO POPULATION AND LIMITED FINANCIAL RESOURCES?

Not only is the Negro handicapped in his fight against tuberculosis by his low economic status, both as an individual and as a race, but the fact that the majority of the Negro population is concentrated in a relatively small number of states, whose financial resources are meager, still further complicates the problem of control.

Despite the large northern migration that occurred during the period 1915-1930, nine million Negroes (or,

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roughly, three fourths of the Negro population) still live in the following thirteen states, all essentially Southern: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, Missouri, North and South Carolina, Tennessee, Texas and Virginia.

Eight of these states have more than half a million Negroes each, and in nine of them Negroes constitute more than one fourth of the total population.

Even granting the argument advanced by sociologists that with the return of prosperity this trend to the large cities of the North will be resumed, it is evident that for a long time to come the vast bulk of the Negro population will be found in the group of states just enumerated.

Furthermore, of the nine million Negroes living in these states, approximately eight million (or two thirds of all the Negroes in the United States) reside in the rural districts, the towns and the smaller cities of the South, and it is the problem presented by this group that I shall briefly consider.

In general, it may be said that most of the Negroes of this rural, town and small city group live in communities that are unable to finance adequate control measures as defined by present standards. Unlike their cousins residing in the large cities, they must depend very largely on the state to provide facilities, particularly in the matter of hospitalization. Several of the states listed make no provision whatever for sanatorium treatment for either white or colored patients, and in most of the others the facilities provided are grossly inadequate.

Certainly, the matter of providing an effective service for the control of tuberculosis among Negroes (or, for that matter, white persons) is an extremely complicated one in many of the Southern states, owing to their low economic status. In fact, one may say that there are as yet in existence no adequate data on which to formulate a program that would be reasonably effective and yet within the financial ability of most of these states, and this is particularly evident at the present time.

I shall consider a few of the attempts at meeting this situation.

Tennessee.—The tuberculosis study that is being carried on by the Rockefeller Foundation in Williamson County under the direction of Dr. Bishop has as one of its objectives "the development of a program of control of tuberculosis designated to have practical state-wide application."

A qualitative appraisal of tuberculosis nursing service by officials of the state department of public health gives every indication of materially increasing the efficiency of the service rendered, with no additional cost.

Dr. Overton of the City Health Department of Nashville is experimenting extensively with the use of B C G. It is possible that his results and those of others who are working with this organism will be of value, since B C G, if it can be shown to yield favorable results, is within the financial reach of even the poorest state.

Alabama.—The diagnostic clinic of the Alabama State Board of Health has already standardized on the use of the paper film.

One of the objectives of the study now being made for the Rockefeller Foundation by Dr. Graham in Opelika is to determine "whether or not satisfactory isolation of the tuberculous patient may be achieved at home by the utilization of portable screened cottages and screened porches, together with the provision of adequate public health nursing service, and what it will cost to secure effective isolation by these methods."

Georgia.—Dr. Haygood is now working on a plan for a district tuberculosis nursing service to be operated in conjunction with the state tuberculosis clinic and financed by small contributions from the counties served. The diagnostic clinic of the state health department is trying out the paper film and also planning a change in procedure which, it is hoped, will enable it to examine a much larger number of patients with only a slightly increased expenditure.

It is evident that while the problem of tuberculosis control in the Southern states is a serious one, it is susceptible of at least partial solution. There is reason for encouragement in the fact that this problem is recognized and that attempts are being made to solve it, and also that the Southern states, despite their financial handicaps, have already made notable progress in other phases of public health work.

IS IT ADVISABLE TO USE COLLAPSE THERAPY IN THE TREATMENT OF TUBERCULOSIS IN THE NEGRO?

It may be said that at present the consensus favors collapse therapy as a therapeutic measure, yet a number of clinicians, notably in the Southern states, still believe that it is contraindicated in the Negro.

Dr. Henry D. Chadwick of Detroit will shortly publish an analysis of the favorable results that he has obtained from the administration of pneumothorax to a large number of Negro patients in the several stages of pulmonary tuberculosis. This contribution should add materially to knowledge on this subject.

As to the effect of this division of opinion on control measures, it undoubtedly is a handicap. There seems little doubt, however, that enough definite evidence will soon be accumulated by Dr. Chadwick and others to put it beyond the realm of controversy.

SYPHILIS AND TUBERCULOSIS

From the studies of Wenger, Ricks and others, it would appear that at least 25 per cent of all rural Southern Negroes have syphilis and there is every reason to believe that urban Negroes have at least as high an incidence. It is therefore of the utmost importance to the Negro race that the rôle of syphilis in the high tuberculosis death rate be accurately determined.

There still exist two schools of thought as to the relationship between syphilis and tuberculosis. Some authors maintain that there is an antagonism between these two diseases, and inoculation of the tuberculous patient with the syphilitic virus has been suggested as a therapeutic measure. The weight of opinion, however, is that syphilis reduces the natural resistance against tuberculosis, that it is an important predisposing factor, and that its presence renders the prognosis more grave.

With regard to the treatment of the case in which syphilis and tuberculosis are coexistent, the clinician will gain small comfort either from a survey of the literature or from a consultation with his colleagues, there being only one point on which most of the authorities are in agreement; namely, that the iodides should not be used.

Many clinicians advocate the treatment of syphilis with arsenicals, with no qualification as to dosage. Others believe that while the arsenicals should be used, the dosage should be materially cut down. Still others

are of the opinion that the arsenicals are contraindicated and that bismuth is the medication of choice. Another group of clinicians believe that they obtain better results if the presence of syphilis is disregarded and do not treat it unless it is causing obvious discomfort.

As long as these questions remain unanswered, control measures will obviously be handicapped. In the event that syphilitic soil is shown to favor the implantation of tuberculosis, additional emphasis must be put on the reduction of the present high incidence of syphilis in the Negro, and it is evident that the present variety of ideas as to therapeusis is not conducive to effective treatment. It is not at all unreasonable to suppose that in answer to these questions lies the possibility of an appreciable reduction in the Negro death rate from tuberculosis.

It is interesting to know that Dr. Aronson of Phipps Institute is now investigating this problem.

CONCLUSIONS

1. At present, the control of tuberculosis, particularly in the Negro, is handicapped by lack of exact knowledge regarding several points of importance.

2. Further research is necessary. Studies such as those now in progress at Phipps Institute and in Tennessee, Alabama and elsewhere should add materially to the present limited knowledge regarding the epidemiologic, pathologic and clinical peculiarities of tuberculosis as it affects the Negro and may aid in the solution of some of the administrative problems involved. Regarding the latter, it is suggested that valuable information may be obtained by studying the various adaptations of administrative procedure that various health departments are making to reach more effectively the Negro population.

3. In view of the important sociological aspect of the problem of tuberculosis among Negroes, this line of approach, which appears to have been relatively neglected, should be further developed, perhaps in conjunction with some of the studies now in progress.

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ABSTRACT OF DISCUSSION

DR. HORTON R. CASPARIS, Nashville, Tenn.: Dr. Guild brought out that Negro children seem to handle first infections as well as white children. That has been my impression, but Negro adults do badly. The Negro children have nothing to do with their first infections, the Negro adults have everything to do with tuberculosis. There is no specific treatment for tuberculosis and whether or not one gets well depends largely on the individual's more or less sustained cooperation. It would seem, therefore, that the emphasis of control measures should be laid more on prevention. The Negro cannot be depended on to take up that phase of the problem. Reliance must be placed on public health means, official and nonofficial organizations, to go out and find active tuberculosis and to eliminate it as a source of infection. Infected children must be helped either with B C G, if that proves satisfactory, or with other means.

DR. MARIE PICHEL LEVINSON, New York: I cannot refrain from adding a word about a measure that I consider preventive. In New York there is a contraceptive clinic for Negroes. I believe it is the first one in the country. A branch is located in Harlem, which is the district in New York having the greatest death rate from tuberculosis. It was felt that in this neighborhood particularly where the infant mortality was so great a proper response from the Negro population was not being obtained. After three years' existence it was found that more white patients than Negroes were coming to the Negro clinic, so last month the headquarters were moved into the New York Urban League Building, which is a settlement house for the advancement of everything relating to Negroes, and the number of Negroes coming to the clinic for such advice has increased. I feel that this is a very necessary public health measure and I believe it is an adjunct to attacking the problem preventing tuberculosis. New York City has a large Negro problem and we are just as concerned there as people are in the South. The various social agencies refer tuberculous or pretuberculous women to our clinic for contraceptive advice as a preventive measure.

DR. EMIL BOGEN, Olive View, Calif.: I have been interested in trying to find why certain races show a higher mortality rate from tuberculosis. I have tried to find out by animal experimentation what will make one strain or family of animals more susceptible to tuberculosis than another. Larger doses of infection will with fair uniformity produce larger amounts of tuberculosis. I have not been able to find any difference by environmental means affecting the development of tuberculosis in animals after they have been infected. I think one has to distinguish, when speaking of environment, between those environmental factors affecting exposure to infection, or the number of germs that the individual receives, and those factors affecting his resistance to the infection. Certainly it can be shown, both by animal experimentation and by epidemiologic studies, that tuberculosis depends greatly on the number of organisms. Cases can be traced from one active case to another. It is much more difficult to show that such things as income or housing conditions or food really affect the development of tuberculosis in different peoples. It is also known that, after tuberculosis develops, the course of the disease depends very much on the treatment and that at the institution with which I am connected we find that the Negroes or those of any other race coming in with early tuberculosis have a very good chance of recovering. I feel that one of the greatest factors responsible for the different mortality rates in different races is the readiness with which the different people come for early treatment.

PROGRESSIVE PSEUDOHYPERTROPHIC MUSCULAR DYSTROPHY

RESULTS OF TREATMENT WITH EPINEPHRINE AND PILOCARPINE

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For nearly a century this poorly understood symptom complex has been recognized and has presented a constant challenge to the medical profession. The various therapeutic procedures recommended, including exercises, physical therapy, dietary regulation, calcium and glandular preparations, have all failed to have any appreciable influence in improving the condition or in stopping the gradual relentless progression to complete helplessness.

In 1930, Kuré and Okinaka [1] reported improvement in nine cases following the daily administration of epinephrine and pilocarpine. In 1931, I [2] reported improvement in sixteen cases in which this treatment was used. This paper is based on the present results in these and twenty-two additional cases treated over the period of the last three years at the Shriners Hospital for Crippled Children at Springfield, Mass.

In addition to my own cases I have collected results in fifty-six cases in which this treatment was given

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1. Kuré, K., and Okinaka, S.: Behandlung der Dystrophia musculorum progressiva durch kombinierte Injektionen von Adrenalin und Pilokarpin, Klin. Wchnschr. **9**: 1168 (June 21) 1930.

2. Hough, G. deN., Jr.: Progressive Pseudohypertrophic Muscular Dystrophy, J. Bone & Joint Surg. **13**: 825 (Oct.) 1931.

elsewhere, thirty-one being from the literature [3] and twenty-five from personal communications. According to the various observers, improvement has been noted in thirty-nine, fifteen have been unchanged, while in two the condition has become worse under treatment.

I have used epinephrine-pilocarpine in thirty-eight cases in all stages of the disease, the number of injections varying from twenty-three to over 600. Administration has been by daily hypodermic injections of 0.3 cc. of a sterile solution consisting of one part of 1 per cent solution of pilocarpine hydrochloride and two parts of 0.1 per cent (1:1,000) epinephrine hydrochloride. The drugs have no incompatibility and may be dispensed together in a rubber capped vaccine bottle and the daily dose removed under aseptic precautions.

Every patient has shown some clinical improvement while taking the treatment. This improvement has been both subjective and objective. It has varied in amount from a slight sense of increased strength with a greater desire to attempt functional activity to apparently complete recovery. In most cases some definite functional improvement could be demonstrated. The improvement was greatest in the least advanced cases.

There have been no additional therapeutic procedures other than general hygienic care, ordinary diet, and normal activity to the limit of the individual capacity. In particular, glycocoll has not been used in spite of some encouraging reports, because of my desire to evaluate as accurately as possible the influence of pilocarpine-epinephrine.

It is obviously impossible to eliminate the psychologic factor of a definite course of treatment, particularly in cases in which previously repeatedly hopeless prognoses have been given. The hopefulness and optimistic attitude of the parents very probably has been reflected in the mental condition of the child, and due allowance for this factor must be made. This is particularly true when the improvement has been primarily subjective or when it has been relatively slight.

Fifteen cases have been observed for from one to two years since the last treatment was given, from sixty-nine to 240 injections having been given. In only one case is there any evidence that the progress of the disease has been stopped. The patient, a 13 year old boy with symptoms for eleven years, had been confined to a wheel chair for three years. He has apparently not changed during the past year following 240 treatments. Every other case has shown definite progression of the disease, in spite of 200 treatments in one case, 180 in another, and from seventy to ninety in the remainder.

Nineteen patients are still receiving treatment, nine of whom have been under treatment too short a time to present evidence on the question of progress, having received less than 150 injections. Ten patients have received from 150 to 600 injections. Four of these children have shown some loss although still as well as, or better than, when the treatment was started. The other six patients have maintained their improvement.

From this evidence I have arrived at the definite conclusion that, although epinephrine-pilocarpine is helpful and of symptomatic benefit, it is not curative.

3. Kuré and Okinaka (footnote 1). Voshell, A. F.: Progressive Pseudohypertrophic Muscular Dystrophy, South. M. J. **26**: 156 (Feb.) 1933. Goralewski, G., and Engel, E.: Zur Behandlung der Dystrophia musculorum progressiva mit Adrenalin und Pilokarpin, Deutsche med. Wchnschr. **58**: 1169-1170 (July 22) 1932. Leiter, A.: Die Adrenalinbehandlung bei progressiver Muskeldystrophie, Monatschr. f. Psychiat. u. Neurol. **81**: 289 (Jan.) 1932.

The treatment must be continued indefinitely and even in spite of continued treatment the condition may progress.

I have attempted to determine the influence of the treatment on the duration of life by an analysis of fifteen fatal cases, ten from my own cases and five from the literature.[4] As shown in the accompanying table, the four treated cases show a somewhat greater variation of age at time of death, and the average age is about a half year older than in the treated cases. While this suggests a possible lengthening of life, there is not sufficient difference to be of significance.

The remaining problem to be answered is whether this treatment prolongs the period of functional activity. An analysis of ninety-five cases, eighteen of which have been taken from the literature, shows that symptoms are first observed before the age of 2 years in about 12.5 per cent of the cases, from 2 to 4 in 50 per cent, and from 5 to 7 in 30 per cent. In only an occasional case were symptoms first noted after 7 years.

Fatal Cases

Name	Age	Cause of Death	Duration of Disease	Years Unable to Walk
Treated:				
D. R.	9	Acidosis	4	2
Case 5	16	Acute appendicitis	11	5
Case 10	16	Pneumonia	14	7
Case 1	20	Pneumonia	12	7
Average	15.3		10.3	5.3
Untreated:				
W. D. (Voshell)	12	Bronchial disease	..	..
Bishop (1) (Voshell)	12	Whooping cough	..	4
Bishop (2) (Voshell)	12	Stomach trouble	..	4
Case 2	13	Pneumonia	10	3
Case 13	15	Pneumonia	8	1
J. D. (Voshell)	15	Unknown	..	..
Case 6	16	Unknown	10	3
Case 16	16	Influenza and tuberculosis	15	6
W. F. (Voshell)	17	Unknown	..	..
Case 15	17	Gastro-enteritis	15	7
Case 17	17	Pneumonia	16	8
Average	14.7		12.3	4.5

In a few cases the power of locomotion is lost as early as two years after onset, and 35 per cent of the children are unable to walk after 5 years. Most of the remainder (62 per cent) lose their ability to get about between the sixth and the ninth year of the disease. In only an occasional case is gait preserved beyond nine years. Expressed in terms of the child's age, approximately 50 per cent stop walking at the age of 8 to 9 years and 40 per cent at from 10 to 12 years.

The treatment has been carried out in twelve ambulatory and twenty-four nonambulatory cases. In the latter group, in spite of the fact that in every case some improvement was observed, in no case was gait reestablished. Two of the twelve ambulatory patients have since lost the power to walk, at an age of 11 years, after seven and eight years of the disease. Both of these children show a possibly suggestive but probably insignificant increase over the average. The patients who are still ambulatory vary in age from 6 to 13 and average 9.2 years, which is slightly beyond the age at which most of the children lose their power to walk.

CONCLUSIONS

I feel justified in making the following conclusions regarding the use of epinephrine and pilocarpine in progressive pseudohypertrophic muscular dystrophy:

1. Daily doses of 0.1 cc. of 1 per cent solution of pilocarpine and 0.2 cc. of 0.1 per cent epinephrine are of symptomatic benefit in practically all cases.

4. Voshell (footnote 3).

2. In some of the cases the improvement may be wholly or in part due to the psychologic effect of renewed hope based on a definite course of treatment.

3. This improvement has never been sufficient to reestablish gait after the power to walk was lost, but function when present may be markedly improved.

4. There is no evidence that this treatment is curative or that it alters the mortality or increases the length of life.

5. If treatment is stopped for a period of from one to two years, the gradual increase of disability is again noted.

6. Progression may occur while under treatment, but apparently the rate of progress is definitely slower than it otherwise would be.

7. It is possible that alteration of dosage or the combined use of other methods of therapy may give better results.

8. Finally, in spite of the fact that these drugs do not cure the disease, that their benefit is not permanent or as marked as the early reports may have led one to hope, epinephrine-pilocarpine treatment is of sufficient value to justify its continued use in this disease. There is no more excuse for withholding it than there is for not giving insulin in severe diabetes or digitalis to an individual with irreparable cardiac damage. Even these highly valuable therapeutic agents are not curative.

146 Chestnut Street.

ABSTRACT OF DISCUSSION

DR. ARTHUR STEINDLER, Iowa City: The interpretation of this condition from the pathologic and etiologic points of view will have to abide its proper time. I believe it was Duchenne de Boulogne who pointed out that this condition is a disease of the muscles and not of the central nervous system and that consequently all methods of treatment that were directed to the central nervous system would come to naught. So, when in 1929, Kuré and Okinaka came out with their pilocarpine-epinephrine method there was some raising of eyebrows. They, were able, however, to present a series of twelve cases, six of which improved and two were cured. Dr. Hough today presents a series of thirty-eight cases in almost all of which at least temporary improvement was noted. The question of glycine, or glycocoll, treatment ought to be given consideration. When Powers and Techner brought out their chemical investigation on this subject, they pointed out that the creatine was utilized to the degree of 70 to 80 per cent. Others, Gibson and Martin and Brand, demonstrated the synthetic power of the organism to utilize creatine. Gibson and Martin accomplished this by feeding gelatin and Brand by feeding glycine, or glycocoll. Clinical reports on the use of glycine, or glycocoll, above all, the reports of Milhorat and his co-workers describe a certain amount of temporary improvement. The basic idea being that the glycine furnishes the food for the muscles which would otherwise be lost by excessive excretion of creatine, it is believed that the treatment should be employed only in those cases in which the initial excess of creatine excretion in the urine and in the muscle tissue disappears after one week of creatine dosage. Voshell reports fourteen cases; nine were improved and five were not improved. His idea was to combine the pilocarpine-epinephrine with the glycocoll treatment, assuming that the glycocoll would furnish the food for muscles that would otherwise be lost, whereas the epinephrine would provide the stimulation of the autonomic system necessary for the control of creatine metabolism. It is obvious that those cases in which creatine metabolism has been hopelessly upset and is continually affected by an excessive creatine output would not be suitable. I have recently reviewed my own cases, eighty-one in number. Not in a single case was I able to effect an arrest of the condition, although all possible methods have been used, including epinephrine and glycine.

DR. HENRY B. THOMAS, Chicago: At the University of Illinois College of Medicine, cases of dystrophy have been admitted for study since 1931. We have in only a few cases, used epinephrine and anterior pituitary, with no noted improvement. We have used glycine with no clinical improvement; also creatine. I believe that any therapy after function is lost will be of no avail. The etiology of the disease must be sought in order that the loss of muscular function may be prevented. We are anxious, therefore, to experiment on the metabolism of these patients and have our plans laid to proceed along this line. In most cases the diagnosis, as Dr. Hough says, is easy. However, caution is urged in order to prevent mistakes in diagnosis in obscure cases. We have one case in which there is a coexistence of infantile and muscular dystrophy. We have also one case which we have been calling amyotonia for some time. Closer examination proved it to be an instance of muscular dystrophy of the atrophic form. When 8 months old, the patient contracted scarlet fever. After that his muscles grew gradually weaker and he became more deformed. This case, and the one I mentioned before, show a connection with an acute infectious disease. Out of our 634 hospitalized orthopedic cases since 1931, we have included and studied eighteen instances of dystrophy, or about 2.75 per cent of our admissions. The pseudohypertrophic form of the disease was presented by 38⅘ per cent, all boys. The ages ranged from 3 to 14. There were thirteen boys and five girls. That is a proportion of 2.6 to 1. Two are brother and sister, and the third a maternal cousin. One patient has a sister with a similar condition. Thus in four instances the disturbance was of the familial type. In four of the patients an intercurrent disease, such as pneumonia or whooping cough, proved to aggravate the already existent muscular dystrophy, and two-thirds per cent have never walked. Fifty per cent walked normally until the age of 3 to 20 years, and then motion became gradually impaired. At the present time 22⅔ per cent of them are unable to walk; the remainder have difficulty in walking, especially in climbing up and down stairs. Weakness of the legs since birth was present in 33⅓ per cent. The mental development of these patients has been normal. Well pronounced pseudocontractures were found in 44⅔ per cent. The muscles of the thigh, knee and ankle were usually involved.

DR. PHILIP LEWIN, Chicago: I want to express my appreciation of the work that Dr. Hough has done on this subject. I began using epinephrine in 1920. In order not to have to make punctures three times a day. I administered hypodermic tablets of 1/200 grain dissolved under the tongue, which seemed to me a better way than ingestion by mouth, which proved to be worthless. There seems to be an analogy in this condition such as exists between the situations of a coal bin, a furnace and a fireman. The fuel may be deficient in quality, quantity or availability. The furnace may be inefficient. The fireman may not have proper ability, strength or industry. The transportation may be wrong so far as speed, direct route, obtainability or detours are concerned. The energy may be at fault so far as quantity, availability and usability are concerned. So far as muscles are concerned, the three factors are the efficiency, the ability to store up fuel and the ability to transform the fuel.

When Kuré and Okinaka in 1930 reported two cures and seven improved cases, I thought that it was an addition to the armamentarium; but I don't think that Dr. Hough's series, Dr. Voshell's series, or any other series I have studied proves that point. There is undoubtedly something in it. The question seems to revolve about the metabolism. Until the metabolism is thoroughly understood, any method is going to be a hit-or-miss method. There are other forms of treatment, such as glycine, pituitary extract, diet, combinations of the Japanese and glycine treatments, and blood transfusions. I should like to try the method of giving fetal muscle extract. Milhorat, Techner and Thomas are using from 5 to 15 Gm. of glycine a day. increasing the output of creatine, but it must be continued indefinitely. I think the word "improved" is misleading, because any change from a poor routine may be beneficial. The children that are seen for the first time have been under a poor routine, and any change may help them. It must be considered that the course of the disease may have remissions and these may be attributed to the therapy.

DR. GARRY DE N. HOUGH, JR., Springfield, Mass.: Of course, this is simply one phase of a complicated subject. I agree that there is a tremendous amount of information to be learned in order to come anywhere near understanding this disease, and I think that eventually this condition will be subdivided into types and groups, probably as distinct entities. What is now classified as progressive pseudohypertrophic muscular dystrophy may represent a number of different conditions. I am convinced that epinephrine and pilocarpine are beneficial although not curative. Dr. Lewin criticizes the use of the word "improved." In many of the cases perhaps the change has not been sufficient to warrant the use of this term, but my most satisfactory patient, after being under observation for five years, last summer passed his test as a life saver and won a quarter-mile swimming race. If, after five years of disease, he was able to do that. I think he was improved. He is classified, however, as having shown progress, because for three years he represented a complete cure, walking with normal gait and taking part in all normal activities. Now he has a definite limp, walking with a side-to-side sway.

Clinical Notes, Suggestions and New Instruments

CARCINOMA OF BARTHOLIN'S GLAND

REPORT OF TWO CASES

HYMAN STRAUSS, M.D., BROOKLYN

Primary carcinoma of Bartholin's gland is rare. A review of the world's literature by Harer in 1933 revealed only thirty cases recorded, not all of which in his opinion were authenticated. Nothing definite is known about the etiology. Falls says that chronic inflammation has been present in a considerable number of the cases reported. In only one case was there a definite history of gonorrhea and syphilis. Bilateral inflammation of the gland was described in only one case. The lesion has been found in unmarried women but not in virgins. The youngest patient was 28 and the oldest 91, while the average age was over 50 years.

Diagnosis is usually made postoperatively. It is most frequently confused when associated with chronic infection with abscess formation. Syphilis, contrary to gonorrhea, rarely attacks this gland. Chancroid and granuloma inguinale affecting Bartholin's gland have not been reported. Primary tuberculosis is rare, there being only three cases reported. Viet found reports of three cases of sarcoma of this gland. The prognosis, according to Kelly, is usually fatal because of late discovery or incomplete operation. In the cases reported, one patient survived for three and another for six years free from recurrence. Metastasis occurs in the inguinal lymph glands quite early.

The treatment is primarily surgical. However, at Radiumhemmet, in Stockholm, electrocoagulation of the tumor and radiotherapy have been used with considerable success. Howard Kelly advises endothermic vulvectomy and electrocoagulation of the glands in situ. Taussig, who has made a study over a period of years, insists that radical vulvectomy and a complete bilateral Basset operation is the only procedure that has stood the test of time. If the lesion is early or the risk slight, he performs this operation in one stage; otherwise it is done in two stages with an interval of a few weeks. He has not been satisfied merely with excision of the vulva and irradiation of the regional lymph nodes.

REPORT OF CASES

CASE 1.—Mrs. C. M., aged 61, white, an American, was admitted to the gynecologic clinic of the Brooklyn Cancer Institute, Jan. 15, 1932, with swelling of the right side of the vulva, which had been noticed for a few months. At first the swelling was small, firm and painless. In spite of hot compresses and other remedies applied to the lesion, it increased in size. She was referred to the clinic by her physician. There was nothing of interest in her previous history. She was a tertigravida and a tertipara. The menopause occurred at 54. During the year before admittance, the patient had frequent spells of hemoptysis.

On admittance the patient was emaciated, weighing 74 pounds (33.6 Kg.). Examination of the genitalia showed a mass measuring 8 by 4 by 3 cm., involving the right labium majus and almost occluding the introitus. The tumefaction was firm, smooth, not tender, and with no area of fluctuation. The mass was not fixed to the underlying tissues but was adherent to the overlying skin, which was reddened. The inguinal nodes were not appreciably enlarged. Otherwise the genital organs presented no abnormalities. The Wassermann test was negative and the sputum was repeatedly negative for tubercle bacilli.

Examination of the blood revealed: red blood corpuscles, 3,080,000, with no early forms; hemoglobin, 90 per cent; white blood corpuscles, 18,200; polymorphonuclears, 84 per cent; lymphocytes, 11 per cent; monocytes, 4 per cent; eosinophils, 1 per cent.

A roentgenogram of the chest showed no cavities or consolidation, but veiling over both apical fields, an evidence of a thickened pleura. The lung root densities were not abnormal in size. There was some calcium deposit.

A diagnosis of carcinoma of Bartholin's gland was made and operation was performed January 28. The involved area was completely excised. The pathologic diagnosis was anaplastic carcinoma of Bartholin's gland.

Interstitial radium therapy was administered to the right labium at the site of the incision, March 9. Two tubes of 9 mc. each of radon filtered through 0.5 mm. of platinum were inserted and allowed to remain in place until a dose of 1,200 millicurie hours was delivered. In May, a course of high voltage roentgen therapy was administered to the pelvis and perineum, five portals being used. A total of 6,450 roentgens was administered over a period of twenty-one days.

The patient was seen in the follow-up clinic from time to time. In January, 1933, a small erosion was noted at the site of the operative scar. Further radiation was prescribed. This was given by applying two gold filtered radon seeds of 1 mc. content each, delivering a total dosage of 266 mc. hours. Since then the lesion has remained completely healed.

CASE 2.—Mrs. M. L., aged 48, white, American, admitted, Feb. 16, 1933, to the gynecologic service of Kings County Hospital, service of Dr. H. M. Mills, complained of a lump in the vagina and a vaginal discharge. Two years prior to admission, the patient noted a small mass slowly increasing in size. Four months before admission, the mass grew rapidly and a whitish to bloody vaginal discharge occurred. One month before admission, bleeding from the lesion and vaginal pain radiating to the right thigh set in.

The pain was sharp and stabbing. She lost 5 pounds (2.3 Kg.) in two months. She was a primigravida in 1909 and there was a miscarriage, after which complications developed necessitating a hysterectomy. In 1929 the patient had a cholecystostomy, which was later followed by a cholecystectomy.

The patient was obese and did not appear acutely ill. Rectal examination was negative. The right labium majus was enlarged by a mass about the size of a walnut, which protruded over the introitus and practically occluded the vagina but did not extend to the inguinal or perianal areas. It was irregular in outline, much indurated and exquisitely tender. The overlying skin was adherent, swollen, reddened, edematous and beginning to ulcerate. The mass was slightly fixed to the underlying tissues. There was an ulcerated area about 25 mm. in diameter at the exit of the duct, which extended three-fourths inch along the vaginal wall. This area bled readily. The vagina otherwise appeared normal. The uterus presented no pathologic changes; the adnexa were not palpable. A brownish discharge was present. The inguinal lymph glands were not palpable. Roentgen examination of the chest revealed no pathologic changes.

The blood Wassermann reaction was negative. Chemical examination of the blood revealed sugar, 114 mg. per hundred cubic centimeters; creatinine, 1.25; urea, 35. The blood count revealed: red blood corpuscles, 4,192,000, no early forms; hemoglobin, 85 per cent; white blood corpuscles, 5,200; poly-

From the Department of Gynecology, Kings County Hospital, Dr. H. M. Mills, Director, and the Department of Radiology, Division of Cancer, Dr. I. I. Kaplan, Director.

morphonuclears, 61 per cent; lymphocytes, 36 per cent; large mononuclears, 3 per cent.

Examination of a catheterized specimen of urine revealed a specific gravity of 1.021; acid; no sugar; a trace of albumin; many fine granular casts, many leukocytes; an occasional red blood corpuscle.

A diagnosis of carcinoma of Bartholin's gland having been made, a radical vulvectomy was done, February 24. The wound healed slowly because of secondary infection. Six weeks after the vulval wound had healed, a bilateral Bassett dissection of the inguinal and femoral glands was done. The pathologic diagnosis made by Dr. Hala was squamous cell carcinoma, but there was no evidence of metastasis in the lymph glands removed. The convalescence was uneventful. The patient when last seen, June 30, 1933, was free from symptoms and there was no evidence of recurrence.

755 Ocean Avenue.

A PATIENT SENSITIZED TO AN ART GUM ERASER

JUNE ADKINSON, A.M., AND I. CHANDLER WALKER, M.D., BOSTON

Although this case is not of widespread interest to the community at large, it does concern those who use extensively art gum erasers, such as artists, art students, architects and masseurs.

A woman, aged 25, normal with the exception of a defect of vision which is corrected by wearing glasses, daily used a binocular microscope for from one to five hours a day without eyestrain. Recently she began to draw from the microscopic field for several hours at night and often for all day on Sunday.

After a short time the patient noticed a persistent itching of the eyes and edema of the eyelids, which could be relieved temporarily by rubbing the eyes with her hands. Later on, even when she did not touch the drawing materials for several days, the swelling and redness of the eyelids would persist and there was a marked increase of the symptoms whenever the drawing was resumed. Still later there was constant redness, rawness and itching at the corners of the mouth and the usual symptoms of a slight cold. A marked rhinitis and a sensation of soreness in the throat occurred whenever the patient was exposed to the drawing materials. This condition continued for seven weeks.

Fearing that the additional strain on the eyes from the prolonged periods of drawing was injuring her sight, the patient consulted an ophthalmologist, who found that her vision was unchanged, in spite of the excessive use of the eyes. From the history and the appearance of the eyelids and the corners of the mouth, the ophthalmologist felt that the condition was allergic in nature and was caused by some substance to which she was only recently exposed. Skin tests were advised with toilet preparations, drawing materials and other substances such as clothing and gloves.

Since her toilet preparations were of the same brand that she had used for years and since the only change in her environment and occupation was the drawing and furthermore because the symptoms, which started soon after she began to draw, were aggravated whenever she used the drawing materials for a long time and were relieved when she was not exposed to them, the patient thought that the paper, the ordinary rubber eraser, the soft viscous art gum eraser or a cement used for mounting pictures was probably the offending factor.

The drawing materials were avoided for several days until the eyelids were only a little swollen and there was very slight itching. When the patient was nearly normal again, skin tests by the scratch method were made on the left forearm with toilet preparations, with rubber eraser, soft art gum eraser, picture mounting cement and drawing paper. A very small amount or piece of each substance was placed on a slight cut made with a sharp scalpel, penetrating the cuticle but not drawing blood. A drop of tenth-normal sodium hydroxide was placed on each scratch to dissolve the fragment of material and allowed to soak for fifteen minutes, after which the scratches were gently wiped off and the reactions were compared with a control scratch on which only a drop of tenth-normal sodium hydroxide had been placed. The tests with the toilet preparations were entirely negative, the tests with the rubber eraser and the drawing paper were slightly red, but the test with the art gum eraser produced an urticarial wheal 0.75 cm. in diameter surrounded by a flushed area about 2 cm. in diameter.

Although the eyelids were only slightly itching and swollen before the skin tests were made, on the following morning and apparently as a result of the skin tests, both eyelids were badly swollen and the itching was severe. The swelling disappeared rapidly and the patient was fairly comfortable for several days or until the following Sunday, when she spent several hours drawing with the same materials. After this exposure the swelling and itching of the eyes reappeared and continued for about twenty-four hours. The corners of the mouth were not affected after the tests or after this prolonged exposure to the drawing materials, probably because the patient, who had had the habit of holding her pencil, contaminated of course with eraser and paper dust, in her mouth while erasing, was very careful to avoid touching her face with her hands and the drawing materials. During the five days of avoidance of drawing, the eyelids became almost normal.

On the fifth day after the last exposure, a more extensive series of scratch tests was made on the other forearm with foods, pollens, animal hairs and feathers, all of which gave entirely negative reactions. In addition, retests were made with solutions of the drawing materials. The solution of rubber eraser gave a negative reaction, the solutions of cement and of drawing paper gave a slight erythema, but the solution of art gum eraser gave a definite itching raised area about 1 cm. in diameter surrounded by a flush about 3 cm. in diameter.

About two hours after the second series of tests was made, the left cheek began to redden and burn, and an hour later, about 5 o'clock, a definite urticarial wheal appeared on the left cheek. By 8 o'clock there was itching and marked swelling of both eyelids as severe as the symptoms produced by several hours' use of the drawing materials to which the patient had not been exposed for five days. Application of fresh menthol ointment gave sufficient relief for her to go to sleep normally.

About 2 o'clock in the morning the patient was awakened by a very severe burning sensation in both eyes. The eyelids were so edematous that the left eye could hardly be forced open. The lips were stiff, swollen, protruding and hot, and there was a severe rhinitis. The throat was not affected, but the patient was frightened and in mental distress. The application of boric acid solution gave no relief, but acetylsalicylic acid tablets and the application of fresh menthol ointment relieved the symptoms in a short time. On the following morning, although the edema was somewhat reduced and the itching had subsided, the eyelids were still badly swollen and two or three hivelike areas appeared on the cheek and neck. After the application of menthol ointment at 11 o'clock, the facial swelling receded rapidly.

Examination of the test area on the arm showed that all scratches were normal where the tests had been negative on the previous day. The scratches to which the solutions of picture mounting cement and rubber eraser had been applied were negative and the scratch on which a solution of drawing paper was tested showed a slight redness; but the scratch on which the art gum eraser solution had been placed showed redness and erosion about 0.75 cm. in diameter.

In order that the drawing, which was an unaccustomed occupation, might be finished, a plan was made for the patient to protect herself from exposure to the dust of art gum eraser and drawing paper dust by smearing her face heavily with ointment of rose water, by wearing a damp gauze mask over her mouth and nose, and by protecting her eyes with glasses. With these precautions, the patient was able to continue her drawing for two and one-half hours on one day, five hours on another and longer periods with no return of the itching and edema. Any use of the art gum for erasing without the facial mask caused a beginning of the itching and swelling of the eyelids, but erasing done with the ordinary rubber eraser produced no discomfort even without the mask.

A slight return of the irritation of the eyelids was noticed whenever the patient sat in the room where the drawings had been made. After a thorough dusting of the furniture and of the work table with a damp cloth, and beating of the rug outdoors, the patient experienced no further trouble in the room.

From the Medical Clinic of the Peter Bent Brigham Hospital.

Still later, when the patient visited the store where the art gum was purchased, she stood near a counter on which were exposed brick-shaped large pieces of the art gum material to be used on their hands by masseurs in rubbing patients for weight reduction. The odor or dust of the material was so abundant that the patient felt an immediate effect in her eyes and throat and she retired for relief to the sidewalk until her purchases were ready.

721 Huntington Avenue.

Council on Pharmacy and Chemistry

PYRIDIUM OMITTED FROM N. N. R.

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

PAUL NICHOLAS LEECH, Secretary.

Pyridium[1] is the monohydrochloride of an azo dye of the pyridine series, phenylazo-*a*-*a*-diamino pyridine. It is marketed by Merck & Co., Inc., in the form of a 1 per cent aqueous solution, a 10 per cent ointment, and tablets containing 0.1 Gm. The firm presented the product for consideration of the Council in 1928, proposing it for use mainly as a urinary antiseptic. The A. M. A. Chemical Laboratory examined the product and evaluated suitable standards of stability and purity, as well as corroborating the claimed composition.[2]

The firm's original presentation of Pyridium was accompanied by four circulars containing claims and excerpts from a pamphlet by Iwan I. Ostromislensky, entitled "The Scientific Basis of Chemotherapy." Ostromislensky, who originated Pyridium in 1912, appears to have used the drug first in Russia in 1917 and brought it with him to this country for clinical trials and manufacture about 1924; the base apparently was first described by Tschitchibabin and Zeide. Most of Ostromislensky's book on chemotherapy is concerned with an account of Pyridium. This evidence was judged to be unconvincing. The Council declared Pyridium unacceptable in July, 1928, and adopted for publication a statement of its consideration. A request by Merck & Co., Inc., for postponement of publication of this report was granted.

Additional evidence was presented by the firm in April, 1929, and further postponement granted. A recommendation to accept Pyridium in December, 1929, was not adopted because it was desired to obtain opinions on the evidence from critical genito-urinary surgeons. In March, 1930, opinions on the value of the evidence for Pyridium were expressed for the benefit of the Council by two prominent genito-urinary surgeons, consultants of the Council, who considered the evidence submitted to be insufficient to support the claims but did not advise rejection of the product. Further postponement of action by the Council was decided on.

While these negotiations with the Council were being carried on by Merck and Co., the Mallinckrodt Chemical Works began to push the sale of Mallophene and E. R. Squibb and Sons began to exploit Serenium; Mallophene (for which the firm has indicated willingness to substitute the nonproprietary name Azophene) is identical with Pyridium, as shown by an investigation in the A. M. A. Chemical Laboratory, while Serenium is an azo dye of a similar type. The firms of Mallinckrodt and Squibb did not submit their products to the Council at that time, and Merck and Co. appeared to be suffering a loss through its attempt to cooperate with the Council. A recommendation that Pyridium be accepted for one year was adopted in April, 1930. The referee stated in the discussion of this action that both genito-urinary consultants favored acceptance. After discussion of the evidence, the Council announced acceptance of the product.[3]

Pyridium was retained in New and Nonofficial Remedies during 1931. On the basis of new evidence presented by the firm, the Council's referee, in May of that year, obtained an opinion from one of the consultants that Pyridium still gave promise of therapeutic usefulness, but the other consultant was not convinced by the new evidence. This evidence was chiefly voluminous unpublished reports submitted by the firm. The Council voted to accept Pyridium for another one-year period, although at the time a member of the Council stated that he feared that in a few years pyridium will join the ranks of discarded urinary antiseptics.

A new referee was then assigned the task of reviewing the old and new evidence on Pyridium. He recommended reacceptance of Pyridium under severely limited claims, and in November, 1931, the Council adopted this recommendation. The conditions specified for this reacceptance considerably restricted the claims for Pyridium. The restrictions were, in brief, that the firm should not emphasize the tissue-penetrating property of Pyridium, should limit claims for efficacy of the drug in the treatment of prostatitis and pyelitis, should omit all claims that the drug protects the tissue cells against bacterial toxins and stimulates body defense, regeneration and repair of tissues, and should refer explicitly to possible gastro-intestinal disturbances sometimes produced by the drug. The firm agreed to abide by these requirements and in later correspondence with the referee, through the Secretary, agreed to drop its claim that Pyridium taken by mouth gives a bactericidal power to the urine. An antibacterial or bacteriostatic action of urine containing excreted Pyridium seemed to have been established according to the evidence reviewed at that time.

During 1929, bacteriologic reports had been received from the Lederle Laboratories, the Pease Laboratories, the Gradwohl Laboratories, and Professor Prescott of the Massachusetts Institute of Technology. All of these indicated that Pyridium in various solutions had bactericidal and bacteriostatic effects on B. coli and Staphylococcus aureus. They favorably impressed the previous referee. They are in harmony with other similar laboratory examinations considered by the Council. They lacked data on the antiseptic property of urine containing excreted Pyridium, and clinical reports also were lacking.

Finally, the firm has stated that it has numerous letters from physicians testifying to the efficiency of Pyridium. These have not been submitted. They could not be considered as having any definite value as evidence. The firm sent a reference to a report on Pyridium by Szancer in the *Pharmazeutische Nachrichten*, Warschau, 1930, Przemysl. This journal not being available to the referee, he has not examined the report. Other expressions of opinion unfavorable to Pyridium have been made by Dr. Keyes[4] and in the Queries and Minor Notes section of THE JOURNAL.[5]

In July, 1932, Merck & Co., Inc., submitted the text of a proposed advertisement of Pyridium as a "first aid" antiseptic, indicating its intention to exploit the product to the public as an "effective" antiseptic for local use on cuts, wounds and abrasions. The referee replied through the Secretary that he did not have sufficient evidence to justify acceptance of Pyridium for these purposes and asked the firm to submit the evidence before proceeding on this plan of exploitation. The firm decided to abandon this plan.

A review of the firm's advertising convinced the Council's referee that it has been restrained within the specifications of the Council as far as the use of words is concerned. The referee believes that Merck & Co., Inc., has made a faithful and expensive effort to comply with the regulations of the Council.

The Council's referee presented the following summary and the conclusions which he has drawn from his consideration of the reports on Pyridium. An annotated list of the papers and reports studied by the referee (except where otherwise noted) appears as the first addendum to this report.

1. Azophene (formerly Mallophene), marketed by the Mallinckrodt Chemical Works, is identical with Pyridium. The Council's report rejecting Azophene appears in this issue of THE JOURNAL. A somewhat similar product, Niazo, also recommended for use as a urinary antiseptic, is marketed by the Schering Corporation. The Council's report rejecting this product appeared in THE JOURNAL, June 3, 1933, p. 1767. Serenium does not stand accepted.

2. Collins, G. W.: Chemical Examination of "Pyridium" and "Mallophene," J. Am. Pharm. A. **20**: 455, 1931.

3. Pyridium, J. A. M. A. **95**: 34 (July 5) 1930.

1. Pyridium in aqueous solution has bactericidal and bacteriostatic properties. These effects are less against B. coli than on Staphylococcus aureus. These effects are reduced by urine and liquids containing complex organic substances.

4. Keyes: Urology, 1928, p. 111.

5. Pyelitis After Otitis Media, J. A. M. A. **99**: 584 (Aug. 13) 1932.

2. Urine secreted after oral administration of Pyridium has no bactericidal effect on B. coli and a negligible bacteriostatic action. Occasionally, urine containing excreted Pyridium may be bactericidal and bacteriostatic against Staphylococcus aureus. The lack of these effects may be due to inability practically to obtain a sufficiently high concentration of the substance in the secreted urine or to a change in the substance in its passage through the body. Since Pyridium does not cause the secretion of an antiseptic urine, it cannot be sustained as a urinary antiseptic.

3. Numerous clinical reports on Pyridium therapy in infections of the urinary tract are open to doubt and do not present convincing evidence. Evidence denying its efficacy is accumulating in published reports and in less formal expressions of competent urologists. During eight years of trial, Pyridium has not become established as a useful remedy.

4. The earlier claims that the drug detoxified bacterial poisons, aided the defenses of the body, and stimulated tissue repair have not been supported and have been withdrawn.

5. No convincing evidence has been presented that Pyridium is a useful antiseptic for application to infected wounds, either in treatment or as a prophylactic.

6. Penetration of tissues, especially mucous membranes, has been demonstrated. But there is no experimental or clinical proof that the amount and character of the compound in the tissues and mucous membranes are such as to kill bacteria or hinder their growth.

The Council's referee recommended, therefore, that the acceptance of Pyridium be revoked at once and that the product be declared unacceptable for continued inclusion in New and Nonofficial Remedies as a local, general or urinary antiseptic because claims for its therapeutic usefulness are not warranted by the accumulated evidence. The Council adopted the referee's report and authorized publication of this statement of the Council's consideration of Pyridium.

When the foregoing report was submitted to Merck & Co., Inc., the firm replied in a carefully prepared and well documented brief which required further consideration by the Council. The thesis of the firm's brief was that Pyridium has become established as a useful remedy. To uphold this, the firm offered (*a*) informal reports from physicians including "approximately 30,000 additional reports as well as a number of special reports of both controlled and uncontrolled clinical experience" received by the firm since December, 1928, and photostat copies of forty-one letters from "leading authorities in the United States giving expression to the fact that they find Pyridium useful in their particular fields." The firm offered to tabulate the reports referred to but the Council considered the submitting of such a tabulation unnecessary, since they no doubt provide a type of evidence which has been abundantly supplied in connection with almost every sort of drug and has not been a dependable guide to wise and fair action on the part of the Council. As for the forty-one letters, they are, properly, brief statements of opinion in reply to an inquiry from the firm. All except two are favorable to Pyridium. These letters were not intended to supply evidence in the sense of detailed observation.

The firm, in addition, presented (*b*) new evidence in the form of published reports. The Council's referee analyzed these, as indicated in the second section of the addenda to this statement.

In its brief the firm pointed out technical faults and omissions of procedure in some of the laboratory investigations which had been cited in the former report as affording evidence unfavorable to Pyridium. The Council's referee was aware of these deficiencies when he reviewed the papers in question. It is correct, as pointed out by the firm, that the single 0.4 Gm. dose administered by Davis and Sharpe [6] is less than the repeated 0.6 Gm. dose recommended by the firm. In the opinion of the Council's referee, however, the experimental evidence presented justified the conclusions drawn from the work.

The firm presented a program of further research on Pyridium, prefacing it with the statement: "From our previous correspondence with the Council, we recognized the need for additional research on Pyridium." The program of research outlined by the firm appeared to the Council's referee to be comprehensive and admirable. The referee had no other suggestion to offer on this program. It is obvious that the results of the investigations will be awaited with interest and may afford a basis for renewed consideration of the drug. The present report of the Council is, of course, made without prejudice to future reconsideration of Pyridium.

6. Davis, Edwin, and Sharpe, J. C.: Urinary Antisepsis, J. A. M. A. **99**: 2097 (Dec. 17) 1932. (See also addendum 35.)

The firm requested the reacceptance of Pyridium, expressing the hope that "the Council will find sufficient basis for formulating conditions upon which to grant a continuance of the acceptance of Pyridium." After careful consideration of the material submitted by the firm, the Council concluded that, while Pyridium may have some value as an adjuvant in the treatment of genito-urinary infections, this is a very indefinite, indeterminable property of a substance recommended for its positive value as a urinary antiseptic.

The Council decided that there does not appear to be sufficient basis for the formulation of conditions on which to grant a reacceptance of Pyridium and voted to reaffirm its previous decision to omit Pyridium from New and Nonofficial Remidies and authorize publication of the foregoing statement of its consideration.

ADDENDA

I. Annotated List of Published Articles and Other Reports Consulted in 1932

An annotated list of the papers and reports studied by the present referee (except where otherwise noted) is as follows:

1. Ostromislensky, I.: Scientific Basis of Chemotherapy, 1926. Book. Bacteriologic and clinical data; unconvincing.

2. Belfield, W. T., and Rolnick, H. C.: Observations on the Physiology and Therapy of the Seminal Duct, J. A. M. A. **89**: 2104 (Dec. 17) 1927. Ingested and injected Pyridium excreted in seminal ducts. Spermatozoa stained. No therapeutic use of Pyridium reported here.

3. Hirschfelder, A. D., and Decherd, G. M.: Inhibiting Effects of Lipoids upon Action of Antiseptics, Proc. Soc. Exper. Biol. & Med. **25**: 824-826, 1928. Bacteriostatic tests with B. coli and Staphylococcus aureus exposed for three hours to Pyridium in salt solution and in solution with lipoids. Lipoids reduced the effect. Pyridium less bacteriostatic than acriflavine and mercuric chloride.

4. Pugh, W. S.: Infections of the Urinary Tract: The Use of Urinary Antiseptics. A. The Pyelonephritides, M. J. & Rec. **127**: 414-416 (April 18) 1928. Twenty cases reported in a summary table. Pyridium regarded as "helpful in cases without anatomical defect."

5. Meyers, J. L.: The Elimination of Dyes by the Uterine Mucosa, J. Lab. & Clin. Med. **14**: 936-939, 1928. Intravenously injected Pyridium stained the uterine mucosa of dogs. No data on concentration of dye in the mucosa. No clinical tests.

6. Wolbarst, A. L.: Oral Therapy in the Treatment of Gonorrhea and Other Urinary Infections, M. J. & Rec. **128**: 272-273 (Sept. 19) 1928. Reports "personal experience with Pyridium as an adjuvant to local treatment." A preliminary report without much evidence presented, concluding that Pyridium is a promising therapeutic agent.

7. Bernhardt, E.: Neuere Farbstoff-behandlung (mit Pyridium) bei Ulcus molle und Gonorrhoe, Dermat. Ztschr. **55**: 397-402. Report on about twenty-one cases cured by Pyridium. Regards Pyridium as "unentbehrlich." Acute gonorrhea cured in fourteen days by oral administration. Observations seem to have been carefully made. Many details not presented. Not convincing, but of some value in favor of the drug.

8. Pugh, W. S.: Infections of the Urinary Tract: Prostatic Lesions, M. J. & Rec. **129**: 155-157 (Feb. 6) 1929. Oral administration of Pyridium plus massage "greatly reduces" the period of treatment of prostatitis. Good results claimed in acute posterior urethritis of gonococcal origin, in salpingitis and in vulvovaginitis of children. No data given.

9. Stern, R.: Klinische Erfahrungen mit Pyridium, einem neuen Harnantisepticum, Klin. Wchnschr. **8**: 1358-1359 (July 16) 1929. Report of three or four cases.

10. Stickl, O.: Ztschr. f. Desinfekt. u. Gsndhtsw. **21**: 33-37 (Feb.) 1929. Test tube bactericidal and bacteriostatic tests of solutions of Pyridium in salt solution and bouillon. Action decreased by presence of bouillon. In salt solution 1: 1,000 Pyridium killed Staphylococcus aureus "at once," Bacteriostatic action in dilution of 1: 10,000 at least. Much less effect on B. typhosus and B. pyocyaneus (1: 1,000 did not kill). Bacteriostatic action slight. Even less effect on B. anthracis. Bouillon reduced action as compared with salt. "Activity of Pyridium considerably less than that of a 1: 1,000 solution of corrosive mercuric chloride."

11. Thomas, B. A., and Wang, I. K.: Studies on the Comparative Clinical Values of So-Called Urinary Antiseptics, J. Urol. **22**: 22-41, 1929. Pyridium in solution in water was bacteriostatic for Staphylococcus aureus 1: 32,000 and for B. coli 1: 500; bactericidal for Staphylococcus aureus 1: 10,000 and for B. coli 1: 100. In solution in urine it was bacteriostatic for Staphylococcus aureus 1: 1,000 and for B. coli 1: 400; it was bactericidal for Staphylococcus aureus 1: 300 and for B. coli 1: 50. Sixty samples of urine containing the excreted dye after oral administration were studied. Six samples had some bacteriostatic action against Staphylococcus aureus and none for B. coli. None of the samples were bactericidal against either of these two organisms.

12. Walther, H. W. E.: Clinical Application of Urinary Antisepsis, South. M. J. **22**: 161-166 (Feb.) 1929. Tabulated report of fifty cases selected from a series of 200 cases of various sorts of urinary tract infection. Very favorable to Pyridium.

13. Bauereisen, A.: Zur Behandlung der Cystopyelitis mit Pyridium, Zentralbl. f. Gynäk. **54**: 2526-2530 (Oct. 4) 1930. Shows that 1: 1,000 solution of Pyridium in water killed B. coli in thirty minutes, and 1: 10,000 killed in twenty-four hours. Urine containing

excreted Pyridium was not bactericidal and only slightly bacteriostatic for B. coli. Argument presented for Pyridium "as an aid to the defenses of the body." Reports briefly result in about forty-two cases of cystonyelitis. Ranks Pyridium high as a urinary antiseptic. Very few data given.

14. Furniss, H. D.: Office Treatment of Urinary Tract in Women, Am. J. Surg. **8:** 289-291 (Feb.) 1930. Pyridium thought to be effective in conjunction with other therapeutic measures.

15. Köster, O.: Bakteriologische und klinische Versuche mit Pyridium, München. med. Wchnschr. **77:** 1013-1016 (June 13) 1930. States that a 1:1,200 concentration of Pyridium can be reached in urine after ingestion of 0.6 Gm. daily. Maximum concentration reached on the second day. No killing of organisms in 300 minutes in a 1:1,500 concentration of Pyridium excreted in urine, but some bacteriostatic action. Brief case reports on treatment of cystitis. Results favorable to Pyridium.

16. Mercier, O.: Le traitment des infection urinaires par les sels de pyridine, L' Union méd. du Canada **59:** 739-742, 1930. Pyridium not referred to by name but was evidently the substance used. The firm directed the referee's attention to this paper. Results of trials over a period of three years in 187 cases reported with very brief comments. No cure in any of 22 cases of acute gonorrhea and 26 cases of chronic gonorrhea. Complete cure of 38 per cent of 29 cases of cystitis. Cures of acute pyelitis in seven to nine days. "Brilliant results" when infection was due to Staphylococcus aureus. Chronic pyelitis cured in eighteen to eighty-six days. Considerable improvement in other cases. Failures in some. Pyridium an absolute failure in treatment of gonorrhea, but possibly beneficial in treatment of cystitis and pyelitis.

17. Neuberger, J.: Pyridium, ein neues Harndesinfiziens, München. med. Wchnschr. **77:** 1016-1017, 1930. Brief comments on good results in treatment of cystitis and pyelitis.

18. Orlowski: Pyridium bei Störungen im Urogenitaltraktus, Ztschr. f. Urol. **24:** 838-842, 1930. Brief reports on about forty-five cases of prostatitis, cystitis, mostly chronic and refractory to other treatment. "Miraculous results" in a number of cases. Pyridium a useful sedative. A man who could not drink beer at night without wetting the bed was cured of this potational enuresis by taking Pyridium and securing diuresis before he went to sleep! Good results claimed in treatment of gonorrhea. Says that Pyridium refutes Neisser's aphorism that "every case of gonorrhea gets well—except the first." There is a note by the editor (Dr. Casper) at the end of this paper, placed there with the consent of Orlowski, stating that Pyridium was no better than other urinary antiseptics.

19. Ravich, A., and Blaustein, L.: Study of 100 Suprapubic Prostatectomies, Long Island M. J. **24:** 425-429 (Aug.) 1930. Pyridium used as part of preoperative preparation. Good results claimed, but there was no way of judging the effect of Pyridium among many other unknown factors.

20. Wolbarst, A. L.: The Study of a New Antiseptic in Urinary Infections, Internat. J. Med. & Surg. **43:** 499-502, 1930. Favorable to Pyridium, but no new evidence presented. Reference to good results in use of Pyridium as an "adjuvant" to other methods.

21. Wolbarst, A. L.: Gonococcal Infection in the Male. 1930. Book. Pyridium decidedly effective as an adjuvant to local treatment of gonorrhea and "decidedly effective" as an "adjuvant to instrumental methods in pyelitis and other upper tract infections of Staphylococcus and B. coli origin." Largely a quotation from Dr. Wolbarst's previous paper.

22. Weil, H.: Ueber die Anwendung des Pyridiums bei Gonorrhoe, Therap. d. Gegenw. **71:** 455-459 (Oct.) 1930. Short reports on about 115 cases of gonorrhea, both acute and with complications. Pyridium an absolute failure here. No favorable results of treatment of B. coli cystitis with Pyridium. It presents strong evidence against Pyridium.

23. David, C.: Trois nouveaux antiseptiques urinaires, Hôpital **19:** 282-284 (April, B). Pyridium cannot be used to replace local treatment. Mucosa of uterine cervix tinged yellow after oral ingestion of Pyridium. Not favorable to Pyridium.

24. Deakin, R. J.: The Efficacy of Pyridium in Gonoccocal Urethritis, Missouri State M. A. **28:** 123-125 (March) 1931. Average duration of treatment: 6 cases, local treatment alone, 109 days; 17 cases, local treatment plus Pyridium, 79 days. Selected cases. Conclusion reached that Pyridium aided treatment. At best this is favorable to Pyridium as an adjuvant.

25. Goerner, A., and Haley, F. L.: A Study of the Antibacterial Properties of Pyridium, Urinary Antiseptic, J. Lab. & Clin. Med. **16:** 957-966 (July) 1931. Bactericidal and bacteriostatic tests of solutions of Pyridium in broth and urine. "Average bactericidal power" 1:5,000, and "average bacteriostatic power" 1:8,000. Bactericidal values higher than those obtained by others. Increased time of contact of Pyridium and bacteria accounts for this. This paper submitted by firm in typewritten torm in 1931. Review shows that it is not strong laboratory evidence in favor of Pyridium and does not give any clinical information.

26. van den Bergh, A. A. H., and Revers, F. E.: Sulfhämoglobinämie nach Gebrauch von Pyridium, Deutsche. med. Wchnschr. **57:** 706-708. Sulfhemoglobin formed when patients take Pyridium and magnesium sulphate at the same time. No clinical data given but reference made to studies by Revers and statement made that Pyridium is very useful for treatment of cystitis, pyelitis and prostatitis.

27. Mason, L. M.: Pyridium Therapy in Genito-Urinary Diseases, Virginia M. Monthly **58:** 190-194 (June) 1931. Report on a two months clinical trial of Pyridium in treatment of prostatitis, pyelitis, pyelonephritis, gonorrhea and chancroids. Number of cases not recorded here. Brief abstracts of fourteen case records. Combinations of therapeutic measures used in nearly all. No clear evidence in favor of Pyridium, but author regards Pyridium as "decidedly effective as an adjuvant to instrumental measures in urinary infections."

28. Müller, F.: Erfahrung mit Pyridium bei septischer Erkrankungen, München. med. Wchnschr. **78:** 233-235, 1931. Remarkably good results in treatment of peritonitis, appendicitis, perimetritis, pyosalpinx, postscarlatinal sepsis, puerperal infection with pelvic abscess, rheumatic fever (?). Single case of each reported. Surgery used in most of these cases, but not in all. The series is too small and uncontrolled to be worth much except as an indication of a possibility.

29. Schofield, F. S.: Typewritten reports, preliminary and supplementary, on "Clinical Observations on Pyridium," 1931. Work done at University of Pennsylvania Urological Department. Tests made at request of Merck & Co. As control, used previous study of 2,000 cases of gonorrhea treated at that clinic. Average duration of treatment by copaiba by mouth and irrigation with potassium permanganate was thirteen weeks. These reports show twenty cases of gonorrhea greatly improved in from four to six weeks and eleven other cases of various urinary tract infections improved by Pyridium. Dr. Schofield does not state his opinion and does not seem to have published these very good results. This paper published later.

30. Tatum, W. B.: Typewritten report sent in by the firm: "A Report of the Value of Pyridium in Forty-Eight Cases of Urinary Infection," 1931. Work done at the instigation of Merck & Co. "Varying good results" in many types of urinary tract infections. Elaborately documented. Long case report. Author concludes that "Pyridium has greatly benefited all cases treated and it has a definite place in urologic therapy as an antiseptic." This report is very difficult to summarize. It made a favorable impression.

31. Rosenthal, B.: Typewritten report submitted by the firm: "Dye Therapy in Chronic Prostatitis," 1931. Work done at the Gouverneur Hospital, New York. Combined Pyridium with other therapeutic measures in treatment of prostatitis and urethritis. Good results obtained. Abstracts of six case histories. Data scanty. Published Am. J. Clin. Path. **2,** September, 1932.

32. Haley, F. L., and Goerner, A.: Typewritten report dated Nov. 25, 1930, submitted by the firm in 1931. Careful study of rate and amounts of excretion of Pyridium after oral administration. Possibility shown that excreted Pyridium differed from the Pyridium taken by mouth. Experiments showed that urine containing excreted Pyridium was bactericidal and bacteriostatic for B. coli and Staphylococcus aureus by prolonged contact of twenty-four hours or more. Inconclusive data on stimulation of wound healing by pyridium. These data impressed the referee favorably and still seem to have value in indicating that prolonged contact of bacteria with urine containing excreted Pyridium may kill or hinder the organisms. No reference to publication of this paper has been found.

33. Riaboff, P. J.: A Study of Pyridium as a Urinary Antiseptic, with Special Reference to Its Elimination by the Kidneys, J. Urol. **27:** 329-342 (March) 1932. Report of careful work done under direction of Dr. Thomas and Dr. Kolmer at Pennsylvania. Pyridium had some bactericidal and bacteriostatic action against Staphylococcus aureus and B. coli in water and urine. But Pyridium excreted in the urine had no bactericidal or bacteriostatic effects on B. coli or Staphylococcus aureus. Strong acceptable evidence against Pyridium.

34. Gillespie, J. B.: Experiments on the Antibacterial Properties of Pyridium and Serenium, Proc. Staff Meet., Mayo Clin. **7:** 372-373 (June 22) 1932. No bactericidal action on B. coli or Staphylococcus aureus by urine containing excreted Pyridium in concentrations of 1:1,600 and 1:8,000. No bacteriostatic action on B. coli and only slight on Staphylococcus aureus. Details of the bacteriologic methods used are not given. Presumably the bacteriologic work was satisfactory. This evidence is definitely against Pyridium.

35. Davis, Edwin, and Sharpe, J. C.: Urinary Antisepsis: A Comparison of Methenamine, Caprokol, Pyridium and Acriflavine as to Clinical Efficiency, J. A. M. A. **99:** 2097 (Dec. 17) 1932. Pyridium given by mouth in 0.4 Gm. doses did not cause the secretion of an antiseptic urine. B. coli grew luxuriantly in urine containing excreted Pyridium. Occasionally such urine decreased the growth of staphylococci but usually did not. The authors conclude that "Pyridium has practically no effect other than to color the urine." No clinical case reports in this paper.

II. Annotated List of Published Articles and Other Reports Consulted in 1933 After the Reply of Merck & Co. to the Report of the Council's Consideration of Pyridium

36. Schofield, F. S.: Specific Urethritis Treated with an Azo Dye, Pennsylvania M. J. **36:** 15 (Oct.) 1932. This is the publication of the typewritten report reviewed in reference 29. The majority of cases of gonorrhea reported here were complicated. The value of Pyridium therapy was judged by "the time interval needed before the patient reached a quiescent stage in which it was deemed advisable to indicate prostatic massage or to search for other foci of infection." This averaged 24.9 days in a group of twenty patients. The referee is not convinced that the improvement noted was attributable to Pyridium. The cessation of injections, massage or the omission of urethral injections in acute gonorrhea established when a drug is given by mouth may be as helpful as the administration of the drug. Dr. Schofield does not report cures attributable to Pyridium, but improvement. At best, the drug appears from this to be a beneficial adjuvant.

37. Courtiss, M.: Antiseptics—Pyridium in Kidney and Bladder Infections in Pregnancy, typewritten copy of a report from the Massachusetts Memorial Hospital in June, 1932. Considerable amount of clinical material relating to 137 cases of pyelitis and cystitis. Eighty per cent of patients cured; 94 per cent relieved. Infection recurred in some cases. Lacks observations on untreated cases and lacks consideration of the expected postpartum improvement of infections occurring during pregnancy. Referee not convinced that Pyridium cured 80 per cent of these patients.

38. Goerner, A., and Haley, F. L.: The Penetration of Pyridium into the Tissues of the Genito-Urinary Tract, report from the Long Island College Hospital, Sept. 21, 1932. Results showed penetration of the dye into the tissues. No proof that the amount and character of the compound in the tissues has antiseptic and therapeutic effects. Penetration has been previously considered by the Council, as stated in this abstract.

39. Marion, D., and Magnan, L. A.: Union méd. du Canada **61:** 1061 (Sept.) 1932. Typewritten translation supplied by the firm. Record of results in "The Use of Pyridium in Obstetrics and Gynecology." Cases of gonorrhea, pyelitis, cystitis, cervicitis and salpingo-ovaritis. "Preliminary work" indicating possible value of Pyridium. Referee not convinced by the evidence.

40. Brown, T. K.: Bacteriological Study of Urinary Infection in Pregnancy and Puerperium, with Special Reference to the Use of Pyridium, from the Department of Obstetrics and Gynecology, Washington University School of Medicine, St. Louis, 1932. Pyridium found to have some value in combating infections of the kidney due to staphyloccoci. Pyridium so ineffective in cases of pyelitis and cystitis due to colon bacilli that methenamine was prescribed as a routine along with Pyridium in mixed colon bacillus and staphylococcic infections. Symptomatic improvement with Pyridium therapy in colon bacillus infections, but the "offending organism" persisted.

AZOPHENE (MALLOPHENE) NOT ACCEPTABLE FOR N. N. R.

In April, 1932, Azophene (formerly called Mallophene) was presented by the Mallinckrodt Chemical Works, St. Louis, for consideration of the Council as beta-phenyl-azo-alpha-alpha-diamino-pyridine hydrochloride. It was proposed for use topically and orally as a genito-urinary antiseptic. Examination by the A. M. A. Chemical Laboratory had shown it to be identical with Pyridium (Collins, G. W.: *J. Am. Pharm. A.* **20**:445, 1931). Since Pyridium already stood accepted, the Council considered accepting Azophene but postponed action until further investigation and disposition of questions which had arisen concerning the former.

Subsequently the Council, as a result of extended investigation, declared Pyridium unacceptable for continued inclusion in New and Nonofficial Remedies because the claims advanced for it as a local, general, or urinary antiseptic are unwarranted (See report on Pyridium). In accordance with its original policy of considering Azophene and Pyridium as identical, and since, to the Council's knowledge, there exist no reports indicating that the former is superior in any way to the latter, the Council declared Azophene unacceptable for New and Nonofficial Remedies because claims for its usefulness as a local, general or urinary antiseptic are unwarranted.

Committee on Foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

TIDAL WAVE CORN MEAL

Manufacturer.—Texas Star Flour Mills, Galveston, Texas.

Description.—Finely granular white corn meal practically free from corn germ and bran.

Manufacture.—The manufacture is essentially the same as that given for Ambrosia Cream Corn Meal (THE JOURNAL, Oct. 28, 1933, p. 1393) with the exception that all the corn grits stock is reduced and blended together to make the final meal.

Analysis (submitted by manufacturer).—

	per cent
Moisture	13.0–14.5
Ash	0.9– 1.0
Fat (ether extraction method)	2.5– 3.2
Protein (N × 6.25)	7.9– 8.4
Crude fiber	1.8– 3.0
Carbohydrates other than crude fiber (by difference)	73.9–69.9

Calories.—3.5 per gram; 99 per ounce.

IRRADIATED VITAMIN D PASTEURIZED MILK

Distributor.—Kennedy-Mansfield Dairy Company, Madison, Wis. (subsidiary of The Borden Company, New York).

Description.—Bottled pasteurized vitamin D milk irradiated by Steenbock process (patent No. 1,680,818).

Preparation.—Milk is irradiated by a "CP Carbon Arc Lamp Milk Irradiator" equipped with recording meters for measuring lamp energy input, output of milk pump, and ultraviolet ray emanations of the arc lamps, which provide complete charts of operation for inspection by plant and health officials. The irradiated milk is pasteurized by standard procedure (holding method, thirty minutes at 63 C.), immediately cooled, automatically bottled and capped.

Vitamins.—Clinical investigation shows this irradiated milk to be a reliable antirachitic agent protecting practically all infants excepting those prematurely born; contains 50 Steenbock vitamin D units per quart.

Claims of Distributor.—Irradiated antirachitic pasteurized milk having otherwise the natural flavor and food values of usual pasteurized milk. Complies with the requirements of the state of Wisconsin and the health department of the city of Madison. The method of irradiation and the equipment are under scientific control.

KRASDALE TOMATO JUICE

Distributor.—A. Krasne, New York.

Packer.—Edgar F. Hurff, Swedesboro, N. J.

Description.—Canned pasteurized tomato juice with added salt; retains in high degree the natural vitamin content; the same as the accepted Hurff Brand Tomato Juice (THE JOURNAL, March 18, 1933, p. 818).

VITAMIN D FORTIFIED PASTEURIZED MILK SCOTT-POWELL

Distributor.—Scott-Powell Dairies, Philadelphia.

Description.—Bottled pasteurized grade B milk fortified with vitamin D (vitamin D concentrate prepared from cod liver oil); contains 150 vitamin D Steenbock units per quart.

Preparation.—The milk complies with the requirements specified by the laws of the states of Pennsylvania and New Jersey and the cities of Philadelphia and Gloucester and other municipalities in which it is distributed.

See this section for Vitamin D Fortified Pasteurized Milk of W. J. Kennedy Dairy Company, Detroit, for description of fortification with vitamin D (THE JOURNAL, July 1, 1933, p. 34). The milk is pasteurized by the standard procedure of holding at 62 C. for not less than thirty minutes, is immediately cooled to 3 C., and automatically bottled.

Analysis (submitted by manufacturer).—

	per cent
Moisture	87.2
Total solids	12.8
Ash	0.7
Fat	3.9
Protein (N × 6.38)	3.5
Lactose (by difference)	4.7

Calories.—0.7 per gram; 20 per ounce.

Vitamins.—The vitamin D concentrate used in the preparation of this vitamin D milk and the fortified milk are regularly tested biologically. Clinical investigation shows this milk to be a reliable antirachitic agent.

Claims of Manufacturer.—A vitamin D fortified, antirachitic pasteurized milk having the natural flavor and food values of standard pasteurized milk.

(1) G. W. C. BRAND AMBER TABLE SYRUP
(2) IOWA MAID AMBER TABLE SYRUP
(3) MINNEOPA BRAND AMBER TABLE SYRUP
(4) VALLEY QUEEN BRAND AMBER TABLE SYRUP

(CORN SYRUPS FLAVORED WITH REFINERS SYRUP)

Distributors.—(1) Grocers' Wholesale Company, Des Moines, Iowa.

(2) Charles Hewitt & Sons Company, Des Moines, Iowa.

(3) Bismarck Grocery Company, Bismarck, N. D.

(4) Wilson Mercantile Company, Wausau and Rhinelander, Wis.

Packer.—Wheeler-Barnes Company, Minneapolis.

Description.—Table syrup; corn syrup base (85 per cent) with refiners syrup (15 per cent); the same as the accepted Golden Oak Brand Amber Syrup (THE JOURNAL, Dec. 3, 1932, p. 1948).

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SATURDAY, DECEMBER 30, 1933

THE RESPONSIBILITY OF THE PHYSICIAN IN THE PREVENTION, DIAGNOSIS AND TREATMENT OF CANCER

Cancer, it has been said, is an unsolvable problem; certainly for the problem of the cause of cancer not even an approximate solution is available. Indeed, the great central problem of life and cell growth has not yet been solved. Whether these problems are unsolvable, no one knows. The advance of biologic science is marked by efforts to explain the succession of phenomena that are laid bare as investigation proceeds rather than by the complete understanding of basic biologic problems in the final sense. In this gradual progress of science, results of great practical importance are achieved from time to time. The discovery of the tubercle bacillus did not solve the problem of tuberculosis, but it did show the right way for further study and for better control of the disease. How the bacillus produces disease and how the body reacts against the bacillus are still largely unsolved problems. The fact is that science provides no complete, no ultimate explanation of any disease; hence little wonder that the problem of cancer remains unsolved.

Notwithstanding the slowness of scientific progress, the knowledge of cancer is actually growing. The truth is that more advance has been made in detailed knowledge of cancer during the last two or three generations than in all previous time. The details of this new knowledge need not be reviewed item by item. The practical outcome is that, while any complete understanding of cancer has not been reached, the power of medicine to prevent, to diagnose and to treat cancer has been increased enormously. And the responsibilities of the physician with respect to cancer have increased likewise. On him rests primarily the duty to make sure that the individual patient receives the benefit of the knowledge and the measures that tend to prevent cancer. Briefly, prevention of cancer rests mainly on the avoidance and removal of "local irritation." Just how "local irritation" acts to cause cancer is not known, but there is no doubt that it may lead to cancer. Of the tissues liable to such irritations and chronic inflammations may be mentioned the uterine cervix with its lacerations and "chronic cervicitis," the skin and its moles and ulcers, the mouth, the tongue, the mucocutaneous junctions, the breast and the prostate with their chronic hyperplastic inflammations. Here is indeed a wide field for constant preventive efforts by the progressive, cancer-conscious physician.

Self evidently, on the physician rests also the main responsibility for the early diagnosis of cancer, on which in turn depends the outcome of its treatment. In connection with this matter, of such vital significance to the individual patient, the physician must consider thoroughly and conscientiously such questions as these: Has he formulated for himself a wise and practical plan for action in all cases in which the question of cancer may arise? Are his regular patients likely to report to him promptly the appearance of any suggestive symptom or sign? If not, why not? Is he fully prepared to take without delay the necessary steps, either by himself or through competent consultants, to secure the final diagnosis in a given case with a doubtful lesion? Does he realize fully that it may be a fatal error to tell a patient with a suggestive lump or lesion somewhere "to forget it and come back next month"? Are the services of a competent pathologist readily available and will adequate specimens for microscopic diagnosis reach the pathologist promptly and in the proper state of preservation? Are the special experts to whom he may refer cases for diagnosis and treatment fully equipped in all respects for prompt and efficient service? Does he accept in its full meaning the statement that the treatment of cancer, surgical as well as radiologic, should be entrusted only to those who have adequate skill and experience? These are questions that the physician must answer in a practical and trustworthy manner if he is to meet his responsibility with respect to cancer as now understood. Better control of cancer by prevention, early diagnosis and prompt treatment rests with the physician.

DINITROPHENOL AND ACCELERATED TISSUE METABOLISM

The discovery of a drug that gives promise of therapeutic usefulness is always an event of interest in medicine. Careful investigation and cautious clinical trial are indispensable before widespread application is undertaken. There have been few therapeutic innovations that have not sooner or later been found to present some limitations to their unqualified practical usefulness or even to involve unanticipated hazards to health. That is why it is extremely important to learn every ascertainable detail of the pharmacodynamic action of new products as early as possible. The problems of the range between useful and lethal doses, the causes of death, and possible antidotes must be considered with great care. This statement may be applied specifically

to 1-2-4 dinitrophenol, a substance demonstrated only a few months ago to produce fever in experimental animals.[1] The observation that this compound can increase the metabolic turnover at once suggested its resemblance to well known stimulants of oxidative metabolism, such as the hormones thyroxine and epinephrine.

The questions raised by the study of dinitrophenol, notably at the Stanford University School of Medicine in San Francisco, have already been considered to some extent in THE JOURNAL.[2] Investigation of its pharmacologic properties shows that it has the power to increase metabolism to high levels without causing important damage to vital organs and functions. Serious harm is apparently caused by the drug only in large doses, which produce too great metabolic stimulation with resulting fever. In low, or therapeutic, doses, the metabolism may be increased 50 per cent or more over considerable periods without unpleasant symptoms or toxicity. Such an action is useful in treating obesity, since the increased metabolism results in loss of weight, just as it does with thyroid medication. As a suitable regimen of dinitrophenol medication for adults there has been suggested, on the basis of the early clinical trials in the reduction of obesity, an initial daily dose of 100 mg. of the sodium salt orally, taken with meals, with an increase at weekly intervals until a dose is established that causes a loss of body weight of between two and three pounds weekly or too severe or unpleasant symptoms of warmth and sweating. Such a procedure has been reported to be free from demonstrable evidences of cumulative or toxic effects. Certain limitations, however, apply to a few susceptible persons.

More detailed information as to the precise function of dinitrophenol is now available.[3] All of the disturbances provoked by the administration of dinitrophenol are attributable to a single primary action, that of accelerating the rate of oxidative metabolism. The magnitude of this acceleration may approach values attained physiologically only under conditions of vigorous muscular exercise and far exceed those resulting from administration of the hormones normally concerned with the regulation of metabolism, thyroxine and epinephrine. Specifically, the increase in oxygen consumption may amount to more than ten times the resting rate. The studies at Stanford University show that the rise in body temperature that follows the increase in oxygen consumption is secondary to the acceleration in metabolism. During the action of the drug, pronounced decreases occur in liver and muscle glycogen, while blood sugar and lactates and muscle lactates tend to rise. The total carbohydrate disappearing, however, accounts for less than half of the oxygen consumption. The principal fuel of the accelerated metabolism must therefore be other than carbohydrate. As there seems to be no increase in urinary nitrogen output, one may assume that fat is lost from the body. Such observations fail to reveal any differences between the "excess" metabolism of dinitrophenol and that occurring normally. Danger arises when the waste heat cannot be effectively disposed of. Dinitrophenol is rapid in action compared to thyroxine; it apparently does not exhibit the complication of sympathetic stimulation so characteristic of epinephrine. With fatal doses of the new drug, a decrease in respiration and oxygen consumption occurs shortly before death. At this time lactates rise and the carbon dioxide combining power and the p_H of the blood fall, indicating the development of a premortal anoxemia and acidosis. However, with nonfatal doses, none of these phenomena appear. Suitable cautions have already been given in THE JOURNAL; they warrant repetition. The drug must be sufficiently pure; it has been stated that much of the material on the market is not sufficiently pure. Aside from the skin reactions, the chief danger from this drug is in the indiscriminate or careless overdosing that may result from its sale to the public. It has already been demonstrated that an overdose of sufficient size will cause a fatal pyrexia in man, just as it does in experimental animals. That an overdosage may be toxic does not constitute a sufficient reason for not using dinitrophenol any more than for any one of many potent drugs commonly employed by physicians, but it does indicate that the treatment must be directed by the physician. For maximal safety the initial dose of dinitrophenol should be small, and increasing doses may be employed only as the clinical response seems to warrant.

1. Cutting, W. C., and Tainter, M. L.: Actions of Dinitrophenol, Proc. Soc. Exper. Biol. & Med. **29:** 1268 (June) 1932.
2. Cutting, W. C.; Mehrtens, H. G., and Tainter, M. L.: Actions and Uses of Dinitrophenol, J. A. M. A. **101:** 193 (July 15) 1933. Tainter, M. L.; Stockton, A. B., and Cutting, W. C.: Use of Dinitrophenol in Obesity and Related Conditions, ibid. **101:** 1472 (Nov. 4) 1933. The Toxicity of Dinitrophenol, Current Comment, ibid. **101:** 1080 (Sept. 30) 1931.
3. Hall, V. E.; Field, J. 2d; Sahyun, M.; Cutting, W. C., and Tainter, M. L.: Carbohydrate Metabolism, Respiration and Circulation in Animals with Basal Metabolism Heightened by Dinitrophenol, Am. J. Physiol. **106:** 432 (Nov.) 1933.

"AVAILABLE" IRON IN THERAPY

The question of the type of compound to be preferred for use in therapy with iron has been the subject of debate for many, many years. Empirically, the inorganic salts of the element found widespread use long before the end of the last century. During that period, distinctions began to be made between so-called organic and inorganic combinations of iron. The term "masked iron" was sometimes given preference over the expression "organic iron." From the latter point of view the acetate and albuminate of iron, for example, were both classified with inorganic iron because they are capable of dissociation and the iron therein is precipitated by ammonium sulphide. Many sources of "food iron," that is, iron as it is present in common food materials such as the yolk of egg, appeared to belong to the category of "masked iron." At one period it was widely believed that "food iron" and related

compounds of the element possess a pronounced advantage from the point of view of readiness of absorption and assimilation. In the course of time, however, the pendulum swung away from this extreme view, leaving the conviction among most critical students of the subject that inorganic iron follows the same course as the food iron. At any rate, there was abundant experimental evidence that inorganic iron can function for the hematopoietic needs of the body.

The more recent investigations of the control of nutritional anemias produced in animals by the use of exclusive milk diets have given a new impetus to the critical consideration of iron therapy, particularly in hypochromic anemia. The contributory rôle of copper represents a new phase of the subject, though it does not fundamentally alter the place of iron. In the case of adults, at least, copper seems to be sufficiently ubiquitous, in the traces that may be requisite, to exclude it from serious consideration in the usual therapeutic routine. Of late, ferric ammonium citrate, used in large daily doses amounting usually to as much as from 4 to 8 Gm., has attained widespread vogue for reasons that are by no means obvious. Many of the formerly popular soluble iron salts seem to have become outmoded.

The availability of iron compounds to an anemic animal can be ascertained by a study of the rate of hemoglobin formation (in the presence of sufficient copper) or by the amount of iron stored in the liver. Recent tests of the former type have been made by Elvehjem, Hart and Sherman [1] at the University of Wisconsin. They show that the iron in a variety of soluble, readily dissociated salts is utilized with practically equivalent ease. This applies, for example, to ferric chloride, ferric pyrophosphate, ferric hypophosphite and ferric glutamate. Elvehjem, Hart and Sherman point out that this does not mean that all the available compounds are equally valuable. Other properties, such as taste and toxicity, are important factors. They have found that ferric pyrophosphate possesses many fine qualities. The iron in pyrophosphate not only is available but is held in such firm combination that it does not produce the astringent effects so characteristic of other iron salts. This salt, they add, may also be valuable in cases of anemia with achlorhydria, because it is soluble in neutral solutions and may be more readily assimilated in the absence of hydrochloric acid.

The Wisconsin biochemists have also made a real contribution to the comparative value of ordinary foods as sources of iron. This cannot be based on their total chemically assayed iron content. Each food contains a portion of iron that is readily utilized for hemoglobin formation and a portion that is unavailable and may consist mainly of hematin compounds. This may help to explain why certain iron salts appear to be superior to food iron in the treatment of responsive anemias. Elvehjem, Hart and Sherman have found that the available iron in foods can be estimated "with a fair degree of accuracy by relatively simple methods, such as Hill's dipyridyl procedure.[2] On this basis about one half of the total iron of such products as wheat, oats and yeast is "available" iron. The Wisconsin investigators have concluded that various forms of nonhematin iron, even insoluble salts, are much superior to hematin compounds (organic iron) as a source of iron for the body. Hematin compounds, they state, have no place in the group of therapeutic agents used for hypochromic anemias. Further research along these lines serves to dispel a considerable number of current prejudices, claims and misconceptions as well as to promote more rational practices in the domain of iron therapy.

1. Elvehjem, C. A.; Hart, E. B., and Sherman, W. C.: The Availability of Iron from Different Sources for Hemoglobin Formation, J. Biol. Chem. **103**: 61 (Nov.) 1933.

Current Comment

THE CLINICAL PATHOLOGIST AS A TEACHER

The evolution of the clinical laboratory in the modern hospital constitutes one of the remarkable advances of the present century. The hospital laboratory is often the axis about which the scientific work of the institution revolves. In his presidential address before the recent annual meeting of the American Society of Clinical Pathologists, Walter M. Simpson [1] directed particular attention to the rôle of the clinical pathologist as a teacher. On the clinical pathologist, he pointed out, devolves a large share of the responsibility for the correlation and dissemination of the scientific aspects of hospital medical practice. The teaching activities of the alert clinical pathologist may assume several forms. A cheerful willingness to give a correct interpretation to laboratory results in the light of clinical observations constitutes one of the most fruitful forms of medical teaching, particularly as related to the welfare of the patient. The hospital staff conference and the clinicopathologic conference provide perhaps the best opportunities for the pathologist to contribute a large share to postgraduate medical education. The well directed clinicopathologic conference makes available the university idea of postgraduate medical education in every hospital that has a capable clinical pathologist. It is Simpson's belief that the clinical pathologist who does not fulfil this duty is missing his greatest opportunity to gain the respect and confidence of his medical brothers. Such conferences are capable of providing constant stimuli to the scientific activities of the hospital. Intelligent correlation and interpretation of the information gained by postmortem examinations will quite naturally create interest in morbid anatomy. The clinician is thus provided with a real incentive to obtain permission for postmortem examinations on his patients.

2. Hill, R.: Proc. Roy. Soc. London, Series B **107**: 205, 1930.

1. Simpson, W. M.: The Clinical Pathologist as Consultant and Teacher, Am. J. Clin. Path. **3**: 327 (Sept.) 1933.

The successful conduct of clinicopathologic conferences requires consummate tact. If the emphasis is placed too heavily on postmortem pathology at the expense of practical clinical aspects, the interest of the average practitioner will not be aroused. Attendance at the clinicopathologic conference should be optional and induced only by the excellence of the program. Such conferences should be held often enough to sustain interest. The weekly or biweekly clinicopathologic conference, lasting for an hour or an hour and a half, but not longer, will accomplish this end. The logical place for the conference is at the hospital. The time for the conference should be chosen with a view to inconveniencing the smallest number of persons. The programs should be arranged so that a wide variety of subjects may be discussed at each conference, in order that physicians in special fields may be induced to attend the conferences regularly. Recurring discussion of commonly encountered diseases is of much greater importance than emphasis on the presentation of rare and unusual ones. The clinical pathologist is the natural and logical director of such conferences. While it is generally admitted that the pathologist is usually "the court of last appeal," the shrewd and tactful pathologist will rarely exercise this prerogative. To give instruction to the informed physician is a different matter from teaching the uninformed layman or medical student. The exercise of restraint will often accomplish much more than a practice of forcing his opinions and decisions on his fellow practitioners.

FEDERAL MEDICAL RELIEF AND EMPLOYEES' COMPENSATION

In these trying times, actions ensue so rapidly in Washington that it is increasingly difficult for a medical journal, published weekly, to keep its readers abreast of the last minute advice regarding their relationship to government activities. Last week THE JOURNAL published an extended statement concerning 4,000,000 workers involved in the Civil Works Administration. It pointed out that apparently these 4,000,000 workers had been placed under the coverage of the Federal Employees' Compensation Act and that therefore they would be entitled to medical care in government hospitals and from government physicians for every injury and occupational disease sustained in the performance of duty. Now comes a revision of the original rules and regulations with a statement that it is retroactive to November 16. Apparently, employees of the Civil Works Administration may have the right to choose their own physicians under such circumstances. The new regulation states specifically that the benefits provided are not intended to be payable as compensation under the United States Employees' Compensation Act. A protest by the Indiana State Medical Association directly to the President of the United States and to the United States Employees' Compensation Commission, accompanied by a similar protest by the director of the Unemployment Relief Commission of that state, brought a reply indicating that all reputable physicians willing to give treatment at reasonable charges may be used for the care of employees of the Civil Works Administration. Moreover, the director of relief was authorized to notify local administrators at once that they are authorized to advise the local medical profession accordingly and to make arrangements to permit reputable private physicians to participate in rendering this service in places in which government medical officers and hospitals are not available and reasonably accessible. As long as the latter rule is in effect it will operate as a bar to the free choice of physicians by injured employees in such places as can make available government service. In the meantime, the American Medical Association has called the situation to the attention of the Federal Civil Works Administrator, urging him to abolish the limitations described and to amend the regulation so as to permit employees to select their own physicians either from all doctors of medicine licensed to practice or else from lists of physicians approved by the United States Employees' Compensation Commission.

Association News

THE CLEVELAND SESSION

Authorization of a Symposium on Amebic Dysentery in the Scientific Exhibit

The Committee on Scientific Exhibit of the Board of Trustees has authorized a symposium on amebic dysentery in the Scientific Exhibit at the Cleveland Session, June 11-15, 1934. The sections of the Scientific Assembly taking part are the Section on Practice of Medicine, the Section on Gastro-Enterology and Proctology, the Section on Pathology and Physiology, the Section on Pharmacology and Therapeutics, and the Section on Preventive and Industrial Medicine and Public Health. The symposium will consist of a group of exhibits dealing with the diagnosis, treatment and prevention of amebic dysentery. Application blanks for space may be obtained from the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago.

MEDICAL BROADCAST FOR THE WEEK

Talks over Network of the National Broadcasting Company

The American Medical Association broadcasts each Monday afternoon from 4:45 to 5 o'clock, Eastern standard time (3:45, central standard time). There will be no talk on Monday, January 1. The next talk over the National Broadcasting Company network will be on January 8.

Radio Talks from Station WBBM

The American Medical Association broadcasts on Tuesday and Thursday mornings from 8:55 to 9 o'clock, central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

January 2. Pasteurized Milk.
January 4. Health Resolutions.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

January 6. Fermentation and Disease.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Society News.—Among others, Dr. Earle H. Hunt, Clarksville, spoke before the Ninth Councilor District Medical Society in Harrison, December 5, on "Vomiting in Pregnancy."——Dr. Benjamin H. Hawkins, Mena, among others, addressed the Sixth Councilor District Medical Society in DeQueen, November 28, on "Lethargic Encephalitis."

Antimalaria Campaign Started.—With the appointment of Dr. William B. Grayson, Little Rock, state health officer, as state director of malaria control work, November 29, the statewide campaign in Arkansas was inaugurated. Work was begun at several places, December 4. The state has been divided into five districts. Salaries and wages will be paid by the Civil Works Administration, while expenses for materials and supplies will be borne by the U. S. Public Health Service.

CALIFORNIA

Lectures on the Heart.—The Los Angeles County Heart Association conducted a series of lectures on heart disease in Los Angeles, December 7-8, the first three sessions of which were joint meetings with the Los Angeles County Medical Association. Dr. Frank R. Nuzum, Santa Barbara, was the guest speaker, on "The Use of Tissue Extracts in Angina Pectoris and Spastic Arterial Disease." Local physicians participating in the program were Drs. Edward Richmond Ware, R. Manning Clarke, Phillip E. Rothman, Henry H. Lissner, Donald J. Frick, Burrell O. Raulston, John C. Ruddock, Howard F. West, Robert W. Langley, William H. Leake and Arthur Stanley Granger.

CONNECTICUT

Beaumont Exhibit.—A collection of all the editions of the work of Dr. William Beaumont on the physiology of digestion, and other documents and memorabilia having to do with his life are on display at Yale University School of Medicine, in recognition of the centenary of the publication of "Experiments and Observations on the Gastric Juice." Included in this collection are two copies of the first edition, published by Allen in Plattsburgh, 1833, one of them in the original cover; a copy of the first edition published in Boston, 1834; a first edition of Combe's reprint, Edinburgh, 1838; a copy of the second edition, published by Goodrich in Burlington, 1847; a first edition of the German translation, Leipzig, 1834, and two copies of the first edition of the facsimile, reprinted in Boston, 1929, on the occasion of the thirteenth International Physiological Congress. There are photostatic copies of Beaumont's license to practice medicine, granted in June, 1812, by the Third Medical Society of the State of Vermont; Beaumont's commission as surgeon of the U. S. Army, signed by President John Quincy Adams in 1828, and an early comment of Beaumont on the case of Alexis St. Martin, on whom his experiments with gastric juice were performed, published in the *Philadelphia Medical Journal* in 1826. The original letter sent by Beaumont in 1834 to Hezekiah Howe, New Haven book dealer, is in the collection. In this letter he says:

> Will you please to let me know what number of copies of my "Experiments and Observations, etc." you may have remaining on hand unsold, soon as convenient? I shall probably have occasion to recall all surplus books from the Eastward to supply the Western market, my depot there having become nearly exhausted and the demand for them continuing.

The exhibit includes a letter from Benjamin Silliman, professor of chemistry at Yale, to Beaumont in 1823, which gives directions for sending a specimen of gastric juice to Prof. Jacob Berzelius in Sweden. There is also a volume of Proceedings of the Connecticut Medical Society in which reference is made to the election of Dr. Beaumont as an honorary member in 1833 and an account is given of his appearance before the society to demonstrate his patient in 1834.

FLORIDA

County Society Organizes Credit Bureau.—Members of the Orange County Medical Society recently organized the Orange County Credit and Collection Bureau in Orlando. A state charter has been granted and the incorporators are Drs. Calvin D. Christ, chairman; Horace A. Day, vice chairman; John R. Chappell, secretary; John S. McEwan, Lawrence C. Ingram, Meredith Mallory and Samuel A. Shoemaker. Credit rating of prospective patients will be made available to members of the society, and the bureau will serve as a clearing house for the physicians' accounts.

ILLINOIS

Society News.—Dr. Ernest Sachs, St. Louis, spoke before the St. Clair County Medical Society in Belleville, December 6, on "Diagnosis and Treatment of Brain and Spinal Cord Injuries."——Dr. Joseph L. Miller, Chicago, was among the speakers at the meeting of the Tri-County Medical Society (Henry, Knox and Warren), November 16; his subject was treatment of migraine.

Reserve Officers' Reception.—The Cook County chapter of the Reserve Officers Association of the United States will give a reception in honor of Major General and Mrs. Preston Brown at the Army and Navy Club, January 6. All reserve officers, whether members of the association or not, are cordially invited and asked to bring, as their guests, ladies and also prospective members of the officers' reserve corps. Further particulars may be obtained from Col. Gilbert Fitz-Patrick, 185 North Wabash Avenue, Chicago, or from the headquarters of the association, 53 West Jackson Boulevard.

State Advisory Board in Public Health.—At the first meeting of the state board of public health advisers, December 4, called by the state health commissioner, three committees were appointed to work out details and recommend practicable programs for dealing with heart disease, amebic dysentery and trachoma. It was recommended at this meeting that the state department of health discontinue its treatment of patients with trachoma and restrict its activities in this connection to education in preventive practice. The promotion of prophylaxis against diphtheria and typhoid and the early adoption of a vigorous state-wide program for the control of heart disease were urged.

Chicago

Dr. Doan to Lecture on Leukopenias.—Dr. Charles A. Doan, professor and head of the department of medical and surgical research, Ohio State University School of Medicine, will present an address before the Chicago Medical Society, January 10, on "Leukopenias from the Standpoint of the General Practitioner." January 14, the society will hold a memorial meeting in honor of its founder, Dr. Nathan S. Davis. The speaker will be Dr. James B. Herrick.

Course in Ophthalmology.—Beginning January 1, a course on ophthalmology will be carried on in the hospitals of Chicago for interns and residents in this specialty, it has been announced. Two hundred hours of instruction will be given by fifty-three instructors from the universities and hospitals in the city, the lectures to be divided evenly between the fundamental and the clinical branches. Practically all the lectures will be delivered at the Illinois Eye and Ear Infirmary.

Society News.—Speakers before a joint meeting of the Chicago Roentgen Society and Chicago Orthopedic Club, December 14, included Drs. Julius Brams on "Congenital Absence of the Femur" and Charles N. Pease, "Injuries to the Intervertebral Disk and Vertebra Following Lumbar Puncture."——Among other speakers, Dr. Joseph Greengard spoke on "Comparative Tuberculin Tests in Children" before the Chicago Tuberculosis Society, December 14.——Dr. John Philip Sandblom, Orebro, Sweden, among others, spoke at a meeting of the Chicago Society of Internal Medicine, December 18, on "Physiology of the Human Gallbladder Studied in Connection with Blood Transfusion and After Stomach Operations."——Speakers before the Chicago Gynecological Society, December 15, were Drs. George T. Palmer, Springfield, on "Tuberculosis in Its Relation to Pregnancy," and Irving F. Stein, "Oxygen Pneumoperitoneum in the Diagnosis and Treatment of Tuberculous Salpingitis."

INDIANA

Society Anniversary.—The eighteenth annual meeting of the Indiana Society for Mental Hygiene, December 4, was an observance of the twenty-fifth anniversary of the mental hygiene movement. Among the topics discussed were "The Mental Hygienist's Attitude Toward Birth Control," "Conservation and Prevention," "Mental Hygiene and Education" and "Mental Hygiene and Crime." Speakers included Drs. Charles P. Emerson, Indianapolis; S. Spafford Ackerly, Louisville; Louis A. Lurie, Cincinnati, and Olga Hoffman, Madison.

KENTUCKY

Lectures for Practitioners.—The Franklin County Medical Society was host for a course of lectures conducted under the auspices of the Kentucky State Medical Association at Frankfort, November 23. Drs. Emmet F. Horine and Owsley Grant, both of Louisville, spoke on heart disease and prostatic and kidney diseases, respectively. The lectures were illustrated with motion pictures and slides and each was followed by discussion. A similar course was held in Williamstown for Grant County physicians in October by Drs. Virgil E. Simpson and Frank P. Strickler, Louisville. Discussions were presented on disease of the thyroid and of the gallbladder.

Society News.—A symposium on the thyroid gland was presented before the Jefferson County Medical Society, Louisville, October 2, by Drs. Adolph O. Pfingst, R. Alexander Bate and William O. Johnson. At a combined meeting with the Louisville District Dental Society, October 16, speakers were Dr. John Stites, on "Dental Infections as Related to the Field of Medicine" and Orville B. Coomer, D.D.S., "The Growing Interdependence of Medical and Dental Practice."——Dr. William R. Davidson, Evansville, Ind., among others, addressed the semiannual meeting of the Southwestern Kentucky Medical Association at Marion, October 24, on "The Infected Hand."

MARYLAND

Society News.—Dr. Simon Flexner, New York, addressed the annual meeting of the Baltimore City Medical Society, December 1, on "Poliomyelitis and Other Virus Infections of the Central Nervous System."——At a meeting of the Allegany-Garrett County Medical Society, November 3, Drs. Walter T. Harrison, Washington, D. C., spoke on diphtheria immunization, and Karl Winfield Ney, New York, the idiopathic epilepsies.——Dr. Allen W. Freeman, Baltimore, spoke before the Howard County Medical Society, recently, on "The Future of Rural Medical Practice."

MASSACHUSETTS

Society News.—Speakers at the fifth annual meeting of the New England Obstetrical and Gynecological Society, November 22, included Drs. Frank A. Pemberton, Boston, on "Cancer of the Cervix—Prevention and Treatment"; Stewart H. Clifford, Boston, "Diseases of New-Born in Early Days of Life," and Herbert B. Nelson, Boston, "Analgesia in Labor."——Dr. Edward D. Churchill, Boston, among others, spoke before the Norfolk District Medical Society in Roxbury, November 28, on "Surgical Treatment of Empyema."

Personal.—Dr. M. V. Govindaswamy, delegated by the Mysore government (India) to make a special study of American psychiatry, is now serving as clinical assistant at the Worcester State Hospital, collaborating in the research activities. For the past two years Dr. Govindaswamy has served as clinical assistant at the Bangalore Mental Hospital.——Dr. Charles H. Lawrence, Jr., has resigned as assistant professor of endocrinology at Boston University Medical School.——Dr. Frederick L. Bogan, Boston, was appointed superintendent of the Sanatorium Division, Boston City Hospital, November 24, succeeding the late Dr. John F. O'Brien.

MICHIGAN

Meeting on Medical Economics.—A special meeting of the Wayne County Medical Society, December 20, was devoted to medical economics, with discussions of the Federal Emergency Relief Administration and the Civil Works Administration as concerns physicians, Michigan poor relief laws, and the doctor's situation in relation to them; the abuse of free and part pay clinics, and the state hospital at Ann Arbor. Mayor John W. Smith suggested that the unemployed be given health examinations by their private physicians so that each man may be in good physical condition when he is called back to work. This plan was also urged for all employees under the Civil Works Administration, because an examination at this time would protect the government against malingerers of the future, it was stated. Plans to correct certain abuses were registered and a permanent clinics committee appointed to execute them. The society will hold a "rally" on tuberculosis, January 22. Drs. Henry C. Sweany, Chicago, and Bruce C. Lockwood will discuss "Pathogenesis and Symptomatology of Childhood Tuberculosis." Henry F. Vaughan, Dr.P.H., commissioner of health of Detroit, will speak on "Medical Participation."

MINNESOTA

Society News.—Speakers before the Hennepin County Medical Society, December 27, were Drs. Jennings C. Litzenberg and Claude J. Ehrenberg, Minneapolis, on endocrine control of menstruation and dysmenorrhea, respectively.——The Minnesota Academy of Medicine was addressed, December 13, by Drs. Halbert L. Dunn and Martin Nordland on "Practical Experiments in What Actually Constitutes a Good Clinical Record" and "Diagnosis and Treatment of Malignant Tumors of the Thyroid Gland," respectively.——Dr. Earl E. Carpenter, Superior, was elected president of the Interurban Academy of Medicine, November 15, whose membership is made up of Duluth and Superior, Wis., physicians. Dr. Frank J. Hirschboeck, Duluth, is the retiring president.

MISSISSIPPI

Program of Malaria Control.—A state-wide malaria control and sanitation program will be carried on in Mississippi over a period of two and one-half months, newspapers reported, November 30. It will be handled as a federal works project instead of an undertaking of the state Civil Works Administration. Dr. Felix J. Underwood, state health officer, is supervisor of the program, and Dr. George E. Riley, chief of the malaria control division, will direct the malaria projects.

MISSOURI

Personal.—Dr. John C. Morfit was recently elected president of the St. Louis Medical Society.——Dr. Paul F. Stookey has been appointed epidemiologist of the Kansas City Health Department.

Kansas City Academy Programs.—The remaining lectures in the series of seven which comprise the 1933-1934 season of the Kansas City Academy of Medicine are as follows:

Dr. William T. Peyton, director, cancer clinic, University of Minnesota: Advancement in Diagnosis and Treatment of Malignant Disease, January 10.

Dr. Ralph S. Muckenfuss, assistant professor of medicine, Washington University School of Medicine, St. Louis: Practical Clinical and Therapeutic Problems as Related to the Study of Virus Disease.

Dr. Charles A. Doan, professor of medicine and medical research, Ohio State University College of Medicine: Clinical Implications of Experimental Hematology.

Dr. Loyal Davis, professor of surgery, Northwestern University School of Medicine, Chicago: Clinical Application of the Newer Discoveries in the Field of Neurological Surgery.

Other lecturers in the series were Drs. Albert M. Snell, Rochester, Minn., on "Differential Diagnosis of Conditions Associated with Jaundice"; Richard H. Jaffe, Chicago, "Endothelial Reticular System: Its Clinical and Pathological Relationships," and Dr. Robert T. Frank, New York, "Clinical Application of Newer Discoveries in the Field of Endocrinology."

NEBRASKA

Society News.—Dr. Walter Lawrence Bierring, Des Moines, Iowa, President-Elect, American Medical Association, delivered the principal address at the annual banquet of the Omaha-Douglas County Medical Society, December 12, on "Historical Sequence in Medical Events."——Drs. Thomas L. Houlton and Abram E. Bennett, Omaha, addressed the Otoe County Medical Society, Syracuse, December 11, on "Head Injuries and Their Immediate Treatment" and "Post-Traumatic Neurological Syndromes," respectively.——Speakers at the January meeting of the Lancaster County Medical Society, Lincoln, will be Drs. Miles J. Breuer, on "The Psychic Factor in the Etiology of Tuberculosis," and Ruth A. Warner and Grace Loveland, "A Satisfactory Technic for Early Pregnancy Tests." Dr. Newell C. Gilbert, Chicago, addressed the society, Lincoln, December 5, on heart disease.

NEW JERSEY

Award to Dr. Theobald Smith.—The Copley Medal of the Royal Society of London has been awarded to Dr. Theobald Smith, director emeritus of the department of animal pathology, Rockefeller Institute for Medical Research, Princeton, in recognition of his research on diseases of man and animals, notably his work in establishment of the theory of insect transmission of diseases.

NEW MEXICO

Typhoid in Taos County.—Sixty-two cases of typhoid occurred in twenty-nine families in two Spanish American communities near Taos during the early fall, according to the New Mexico *Health Officer* for November. Several possible sources for the epidemic were unearthed by Dr. C. H. Douthirt, who made an investigation for the state department of health, but none were definitely proved. Both Ranchos de Taos and

Llano are on an irrigation ditch from which many persons take their drinking water. The few wells in the area are dug wells open to surface drainage. Samples of water from the ditch were negative for B. coli, but water from four wells was positive. Twenty-five cases were definitely the result of direct contact with other cases in the same house; others of visits to relatives ill with the disease. Several patients had attended "velorios," gatherings at the homes of persons who have just died. On these occasions friends and neighbors spend the night, eating a midnight supper and breakfast in the home. Because of the distance from the state laboratory at Santa Fe, efforts to identify a carrier through laboratory examination were unsuccessful. Several deaths occurred. Some cases remained to be investigated. About 600 persons in the two communities received complete typhoid inoculations.

NEW YORK

Hospital News.—Mr. J. Ward Thompson, superintendent of Rochester Municipal Hospital for thirty years, died, October 27.——Contracts amounting to $882,486 have been awarded for the construction of a state hospital for tuberculosis at Mount Morris.——A tumor clinic was opened in November at St. Joseph's Hospital, Elmira, following a suggestion from authorities of the State Institute for Malignant Diseases at Buffalo, as a means of relieving overcrowding at the Buffalo institution. The clinic will be open one hour a week at first.

New York City

Personal.—Dr. Joseph Eastman Sheehan has been made a member of the French Surgical Society.——Dr. Simon Tannenbaum was the guest of honor at a testimonial dinner at Beth David Hospital, December 17, on his retirement as superintendent of the hospital. He will become medical director of Sydenham Hospital.——Dr. William Browning was the guest of honor at a meeting of the Medical Society of the County of Kings, November 21, in recognition of his services in building up the society's library. Drs. James P. Warbasse and Frederick Tilney paid tribute to Dr. Browning, who was guest of honor at a dinner at the Montauk Club before the meeting.

Society News.—Dr. Howard Lilienthal, among others, addressed the first fall meeting of the International and Spanish Speaking Association of Physicians, Dentists and Pharmacists, November 17, on "Dangers of Cerebral Embolism in Thoracic Procedures."——Dr. David Riesman, Philadelphia, delivered the anniversary discourse of the Medical Society of the County of New York, December 18, on "Medieval Universities."——Dr. Grant P. Pennoyer, New York, addressed the New York Surgical Society, December 13, on treatment of varicose veins and ulcers.——Dr. William Seaman Bainbridge addressed the Society of Medical Jurisprudence, December 11, on "The Rôle of Trauma in the Production of Cancer." This society celebrated its fiftieth anniversary, December 16.

OHIO

Public Health Lectures.—The Academy of Medicine of Cleveland and the Albert Fairchild Holden Foundation of Western Reserve University are sponsoring jointly the fourth annual series of public health lectures. Dr. Howard T. Karsner delivered the first lecture on "The Rôle of Germs in Modern Life," December 10. The second will be given by Dr. William Evans Bruner, January 14, on "Care of the Eyes in Youth and Age" and the third, February 18, by Dr. Harold N. Cole, on "The Skin in Health and Disease."

Appointments at Cincinnati.—Dr. Clarence King has been appointed professor and head of the department of ophthalmology at the University of Cincinnati College of Medicine, to succeed Dr. Victor Ray, who has been made professor emeritus. Dr. Gordon F. McKim, professor of urology since 1917, was made professor of surgery and head of the urological division to succeed Dr. E. O. Smith, who resigned because of illness. Dr. Smith was also made professor emeritus. To succeed the late Dr. Charles L. Bonifield, Dr. Frank M. Coopock has been appointed professor of surgery in the gynecologic division.

Society News.—Dr. George E. Follansbee, Cleveland, chairman, Judicial Council, American Medical Association, was the principal speaker at a meeting of the Eighth District Medical Society, in Cambridge, November 1; his subject was "Is Medicine a Profession or a Trade?"——Dr. George T. O'Byrne, Lima, addressed the Van Wert County Medical Society, November 7, on "Feeding of Premature Infants, with Special Reference to Copper and Iron."——Dr. Max M. Zinninger, Cincinnati, addressed the Stark County Medical Society, Alliance, November 14, on "Surgical Treatment of Acute Abdominal Emergencies."——Drs. George T. Harding, Jr., and George T. Harding III, Columbus, addressed the Tuscarawas County Medical Society, New Philadelphia, November 9, on "Present-Day Conceptions of Mental Disease."——Dr. George I. Nelson, Columbus, addressed the Crawford County Medical Society, Bucyrus, December 4, on cardiovascular disease.

PENNSYLVANIA

Hospital News.—The Robert Packer Hospital, Sayre, has obtained a loan and grant of $425,000 from the Public Works Administration, for use in completion of a seven story brick, fireproof hospital with a two story brick extension.——The Hospital Association of Pennsylvania has launched a campaign for exemption of hospitals from the state's new alcohol taxes.——St. Joseph's Hospital, Lancaster, recently celebrated its fiftieth anniversary.

Society News.—Dr. George W. Grier, Pittsburgh, addressed the Lawrence County Medical Society, December 7, on "Radium Treatment of Malignancy."——Dr. Thomas E. Mendenhall, Johnstown, delivered an address on "Endocrine Secretions" before the Somerset County Medical Society, Somerset, November 21.——Among speakers before the Clearfield County Medical Society at the Philipsburg State Hospital, November 23, were Drs. James D. Doyle, Grassflat, on "Control of Complications Arising in Syphilis"; George A. Ricketts, Osceola Mills, "Spontaneous Subarachnoid Hemorrhage," and Lester Luxenberg, "Metallic Poisoning."——A symposium on appendicitis was on the program of the Dauphin County Medical Society, Harrisburg, December 5, presented by Drs. Herbert F. Gross, John A. Fritchey, Earle R. Whipple and Frank F. D. Reckord.——The Allegheny County Medical Society in cooperation with the Pittsburgh Child Guidance Center sponsored a public lecture in Pittsburgh, December 7, on "Mental Hygiene Problems of Today and Tomorrow," by Dr. Bernard Glueck, New York.——The Montour County Medical Society sponsored a symposium on goiter at the Geisinger Memorial Hospital, Danville, December 1. An operative clinic was held in the morning and a scientific program in the afternoon, with Drs. David Marine, New York, Frank H. Lahey, Boston, and William F. Rienhoff, Jr., Baltimore. Dr. Harold L. Foss, Danville, was chairman of the program.——Dr. Temple S. Fay, Philadelphia, addressed the Cambria County Medical Society, Johnstown, November 9, on "Dehydration and Its Application."——Dr. Walter Estell Lee, Philadelphia, addressed the Delaware County Medical Society in Chester, December 14, on "Postoperative Pneumonia."

Philadelphia

Medical Economics Program.—The meeting of the Philadelphia County Medical Society, January 10, will be devoted to discussions of medical economics. Hon. J. Hampton Moore, mayor of Philadelphia, will give an address on "The Municipality and the Medical Profession" and the following physicians will speak: Drs. Frederic E. Elliott, Brooklyn, chairman of the committee on economics of the Medical Society of the State of New York, on "Adjustment of Medicine to the Newer Economic Philosophy"; Seth A. Brumm, president-elect, Philadelphia County Medical Society, "The Activities of the Commission on Medical Economics in Retrospect," and Francis Ashley Faught, chairman, "Activities of the Commission on Medical Economics in Prospect."

SOUTH CAROLINA

Society News.—Dr. Madison Hines Roberts, Atlanta, addressed the Greenville County Medical Society, recently, on problems of the new-born.——Dr. William Egleston, Hartsville, president, Medical Society of South Carolina, among others, addressed the Fourth District Medical Association at Spartanburg recently, on functions of the state board of health.——The Third District Medical Association held a meeting, October 5, at which speakers included Drs. Ernest W. Carpenter, Greenville, on nasal sinus problems, and George R. Wilkinson, Greenville, nonsyphilitic aortitis.

TENNESSEE

Hospital News.—Drs. Dean Lewis, Baltimore, President, American Medical Association, and James B. McElroy, Memphis, were guest speakers at an institute for physicians at Rutherford Hospital, Murfreesboro, November 27-28, under the auspices of the Commonwealth Fund. Dr. Lewis spoke on tumors of bone, fractures, lesions of the breast and diseases of the thyroid, and Dr. McElroy on malaria, anemias and Bright's disease.——Wheat's Hospital, Lewisburg, was burned, November 13, with a loss of about $40,000.

Society News.—Dr. Daugh W. Smith presented a review of 292 cases of incomplete abortion at a meeting of the Nashville Academy of Medicine, December 19. Dr. Merrill Moore, Boston, addressed the academy, December 9, on acute syphilitic meningitis.——Drs. Horace B. Cupp and Edward T. West addressed the Washington County Medical Society, Johnson City, December 7, on "The Rôle of Fluid in Surgery" and "Surgery of the Biliary Tract," respectively.——Dr. Martin H. Fischer, Cincinnati, addressed the Gibson County Medical Society, Trenton, November 27, on diseases of the blood vessels. ——Dr. Robert B. Gaston, Lebanon, was elected president of the Middle Tennessee Medical Association at its semiannual meeting in Murfreesboro, November 23-24. The next session will be held in Springfield. Among the speakers was Dr. William D. Haggard, Nashville, who discussed appendicitis.

WASHINGTON

Society News.—Drs. William F. Patrick and Ivan M. Woolley, Portland, Ore., addressed the Cowlitz County Medical Society, October 11, at Cathlamet, on "Differential Diagnosis and Acute Diseases of Children" and "X-Ray Diagnosis," respectively.—— Dr. Siegfried F. Herrmann addressed the October meeting of the Pierce County Medical Society, Tacoma, October 10, on "Anomalies of the Gallbladder."——Drs. Samuel L. Caldbick, Everett, and Elijah C. Leach, Arlington, addressed the Snohomish County Medical Society, Everett, October 3, on "Fractures in the Region of the Elbow Joint" and "Nonunion of Fractures," respectively.——Dr. James Marr Bisaillon, Portland, Ore., addressed the Walla Walla Valley Medical Society, October 12, in Walla Walla, on "Differential Diagnosis of Postoperative Lung Complications" and Drs. James T. Rooks, Jesse W. Ingram and Carl J. Johannesson, Walla Walla, on "Pulsion Diverticulum of the Pharynx."——Drs. David Metheny and Joel W. Baker, Seattle, addressed the Yakima County Medical Society, Yakima, October 9, on "Intraabdominal Repair of Inguinal Hernia" and "Retroperitoneal Approach to Subphrenic Abscess," respectively.——Dr. James M. Bowers, Seattle, presented a clinical study of gastric ulcers at a meeting of the King County Medical Society, Seattle, November 6; the paper was discussed by Dr. Andrew B. Rivers, Rochester, Minn., who also conducted a clinic at Harborview Hospital in the afternoon preceding the meeting. C. Rufus Rorem, Ph.D., Chicago, addressed a special meeting, November 17, on "Paying for Medical Care," and Drs. Arnold W. Hackfield and Donald V. Trueblood, Seattle, spoke, November 20, on "Interpretation and Treatment of Functional Symptoms" and "Radiation Therapy or Surgery for Cancer," respectively. —— The Lewis County Medical Society gave a banquet in Chehalis, November 13, in honor of its pioneer members: Drs. John T. Coleman, James M. Sleicher, Emmogene P. Sherman, Chehalis, and William Botzer, Mossyrock.

WEST VIRGINIA

Antidiphtheria Campaign.—The Kanawha Medical Society and the health department of Charleston conducted an intensive campaign of diphtheria immunization, November 9-30. Henry F. Vaughan, Dr.P.H., health commissioner of Detroit, visited Charleston, November 7, to assist local authorities in planning the campaign, which was carried out according to the Detroit plan, in which immunization is done in the offices of private physicians. Dr. Vaughan also made a formal address on this subject before physicians of the city. Originally planned for only a few days, the campaign was continued for the rest of the month. During the first intensive drive, 2,210 children were immunized in physicians' offices. Toxoid was furnished by the state health department. An unusual number of cases in the city led Dr. Hugh B. Robins, city health officer, to inaugurate the plan.

WISCONSIN

Hospital Anniversaries.—The Marinette and Menominee Hospital, Marinette, celebrated the fiftieth anniversary of its founding, November 9, with a reception, at which Dr. Clarence H. Boren reviewed the history of the hospital and the town of Marinette. The hospital staff held an informal meeting in honor of Mr. John E. Boren, superintendent, who has been affiliated with the institution for forty-nine years, and of Drs. Maurice D. Bird, Alexander T. Nadeau and Henry F. Schroeder, who have been associated with the hospital for twenty-five years. The hospital was founded by the late Dr. Horace Mann.——The Milwaukee Hospital, Milwaukee, celebrated the seventieth anniversary of its founding, November 5-6. A tablet was unveiled honoring the three chiefs of staff who preceded the present chief, Dr. Curtis A. Evans; they were Drs. Nicholas Senn, William Mackie and Harry A. Sifton. Speakers included Drs. Stanley J. Seeger, president of the State Medical Society of Wisconsin, and Robert Sayle, a member of the hospital staff for twenty-five years. There were also dinners for the nursing staff and for the medical staff, auxiliary board and interns' association.

WYOMING

Banquet in Honor of Dr. Conway.—The Laramie County Medical Society gave a banquet, November 15, in honor of Dr. John H. Conway, Cheyenne, who retired from active practice in October after forty years' service. Dr. Galen A. Fox, president of the society, presided and Dr. George P. Johnston paid tribute to Dr. Conway.

PUERTO RICO

Bust of Dr. Ashford.—Special ceremonies in the School of Tropical Medicine of the University of Puerto Rico, San Juan, December 16, marked the unveiling of a bronze bust of Dr. Bailey K. Ashford, recently retired as a colonel of the medical corps, U. S. Army. Hon. Benjamin J. Horton, acting governor of Puerto Rico, presented the bust to the school of medicine, and George W. Bachman, Ph.D., director, made the speech of acceptance. Other speakers were Carlos Chardón, chancellor of the University of Puerto Rico, and Dr. Rafael Bernabe, president, Medical Association of Puerto Rico. The casting of the bronze bust was unanimously approved by the legislature to recognize Dr. Ashford as founder of the School of Tropical Medicine and as initiator of the first campaign against hookworm disease in America (THE JOURNAL, December 16, p. 1976).

GENERAL

Change in Status of Licensure.—The New York State Board of Medical Examiners reports the following action taken in September:

License of Dr. William J. Ryan, Oakfield, N. Y., revoked by the board of regents on the ground that he had been convicted of a felony; namely, criminal abortion.

The state medical board of Ohio reports the following action taken October 3:

License of Dr. Johanna A. C. Roth, Columbus, suspended for six months because of her conviction on a charge of violating the federal narcotic law.

News of Epidemics. — The Civilian Conservation Corps camp at Elk Grove, Pa., was placed under quarantine, December 7, when four members of the corps developed diphtheria. ——Schools in ten communities in one section of Muskingum County, Ohio, were closed, December 4, to stop the spread of scarlet fever; they were to remain closed until after the holidays.——Churches, schools and the public library were closed in Vienna, Ill., December 19, in an effort to prevent spread of scarlet fever.——An epidemic of mumps was reported to have affected one eighth of the population of 400 in the village of Pearl City, Ill., December 20. The public school was closed.

CANADA

Society News.—Dr. Harold Beckwith Whitehouse, professor of gynecology and obstetrics, University of Birmingham, England, addressed the Toronto Academy of Medicine, October 14, on the menopause. Dr. Paul Dudley White, Boston, spoke, November 7, on "The History of the Development of Our Knowledge of Heart Disease."

New Minister of Public Health.—Dr. Frank Roy Davis, Bridgewater, was recently elected to the provincial legislature of Nova Scotia as minister of public health, succeeding Dr. George H. Murphy, Halifax. Dr. Davis, a graduate of Dalhousie University, has been medical officer of health of Lunenburg County since 1923 and has been on the surgical staff of Memorial Hospital, Bridgewater, for fifteen years. He also served as mayor of Bridgewater for four years.

University News.—*Canada Lancet and Practitioner* devoted its December issue to the class of 1892 of the University of Toronto Faculty of Medicine. Of fifty-four graduates, six remain in Toronto, fourteen are in Ontario, one is in Manitoba, fourteen live in the United States and twenty have died. One member of the class, Dr. Herbert A. Bruce, is lieutenant governor of Ontario.——A medallion of bronze commemorating the late Dr. Alexander S. Monro, president of the Canadian Medical Association in 1931, was recently unveiled at the University of British Columbia. Dr. Monro bequeathed a substantial fund to the university for medical education when a medical school is established at the university.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 9, 1933.

The Radium Treatment of Cancer

The fourth annual report of the National Radium Trust and Radium Commission deals with the work of the past year and also summarizes the progress made in the four years since the commission came into being. There is now a network of seventeen fully equipped radium centers all over the country, and the organization, as originally planned, can be regarded as complete. The commission controls 22 Gm. of radium, which is slightly in excess of the amount recommended by the committee of inquiry in 1929 as sufficient for the medical purposes of the country. The present report states that five years must elapse before an answer can be given to the question as to how much value can be attached to the radium treatment of cancer. Hence it is not possible as yet to see what effect the "national" policy is having on the cancer problem. Meanwhile, good work is being done in various directions, despite the discontinuance of the 4 Gm. radium "bomb." The commission has been developing a 1 Gm. unit treatment at three London hospitals. It is found that this type of massive radiation produces no serious or unforeseen constitutional disturbances with a maximum exposure of six hours a day and is likewise free from danger for the technical and nursing staff. The commission is leaving the problem of the large radium "bomb" to the newly constituted Radium Beam Therapy Research Board. Another valuable part of the commission's scheme is the postgraduate school of radiotherapy at Mount Vernon Hospital and the Radium Institute. More than 300 persons have now received instruction there. During the year a register of statistics to the commission, Mr. R. W. Raven, F.R.C.S., has been appointed, and the summary cards supplied by the centers are being used for the compilation of yearly statistics. It is to this department that the greatest interest will be attached, for by its work the value of radium treatment will be determined.

The Toll of the Roads

The death toll of the roads remains a serious problem. In an inquest at Birmingham on a woman aged 68, killed in a street accident, the coroner said that in all these inquiries it was impressed on him that old persons did not stand a chance if they failed. In the main roads carrying fast traffic, people should be given a reasonable oasis of safety for crossing. If necessary, traffic must be cut into sections, as was done in continental cities. They had surely got beyond the stage when, because an unfortunate person on foot did something wrong, he must lose his life. There was an onus on drivers in busy thoroughfares to keep a reasonable watch in order to combat some failure on the part of pedestrians. At Preston during "the safety week," nineteen persons were injured—twice as many as last year. The chief constable's comment was: "It is an unfortunate coincidence, but our efforts were directed to children, not adults. Adult pedestrians are past redemption."

The total number of persons killed in road accidents in Great Britain during 1930 was 7,305; during 1931 it was 6,691, and during 1932, 6,667. During the first six months of 1933 the number was 3,061, as a result of 2,998 accidents. An analysis was made of the fatal accidents according to the hours of the day. During the early morning hours, when there is little traffic on the roads, the percentage is small (0.4). It rises to a small peak between 7 and 9 a. m. (3.4), drops between 9 and 10 (2.6) and then increases, rising to a further peak between noon and 1 p. m. (7.0). It then declines but rises again after 3 and reaches its highest point between 5 and 6 (9.4). It then gradually decreases but reaches a further peak between 10 and 11 (7.3). These peaks depend on variations in the volume of traffic, both pedestrian and vehicular. Thus there are peaks at the time many people go to work, during the luncheon hours, and when a large number return from work. Of the persons killed in the first six months of 1933, 1,581 were pedestrians, of whom 857 were killed crossing roads, and of these 224 were passing behind or in front of a stationary vehicle; 314 pedestrians were killed not when crossing the road but when running into the roadway; 46 were killed on footpaths, 71 on a refuge; 84 were killed when walking along roads. Of the pedestrians killed while walking on the carriage way, 66 were walking in the same direction as the traffic and 18 against it. Where no footway is available, the highway code recommends pedestrians to walk on the right of the carriage way, so as to face the oncoming traffic.

THE CAUSES

A long table gives all the causes of the fatal accidents assigned by the chief constables. Only 265 out of 2,963 accidents analyzed gave excessive speed as a contributory cause. Inattention on the part of a driver was given as a contributory cause in 139 accidents. Pedal cyclists gave a high number of cases and in practically all the cyclist was the victim. Of the contributory causes attributable to pedestrians, "running into the roadway" was the most frequent and, next, "pedestrian walking or running from behind a vehicle without due care." In 242 accidents, "pedestrian apparently becoming confused or hesitating in traffic" is given as a contributory cause. Apart from mechanical defects, the most important cause contributed by vehicles was inadequate front lighting (thirty-two accidents). Dazzling headlights contributed to twenty-nine accidents. A frequent contributory cause was obscuration of the views of drivers at corners or bends.

PARIS

(From Our Regular Correspondent)

Nov. 15, 1933.

The Congress of Urology

The thirty-third congress of the Association française d'urologie was held at the Faculté de médecine, under the chairmanship of Dr. Bernasconi of Algiers. The topic for discussion was "Methods Other Than Prostatectomy for the Treatment of Hypertrophy of the Prostate." The preliminary papers were presented by Drs. Bernard Frey and Raymond Dosset of Paris. Medical treatment by the injection of pepsin-procaine into the prostate, the administration of testicular hormones, and the subcutaneous injection of the male hormone are methods that are being tried out. The resection of the vasa deferentia has been abandoned in France. Roentgenotherapy and radium therapy are of questionable value, and they are dangerous in case of infection. Since they are always combined with the use of sounds and with lavage, it is difficult to determine just what their influence has been. They are permissible in beginning cases without retention, and in the congestive types, but are contraindicated in aged and infected patients and in those who have large adenomas. There remain the resection methods performed, with the aid of endoscopy, by the transvesical or the urethral route. The authors considered these methods, comparing them with the results of classic prostatectomy. Partial transvesical resections have advocates in France (Legueu, Heitz-Boyer, Martin-Laval) in cases in which the ordinary operation would be dangerous on account of the size of the tumor, the risk of hemorrhage or the general condition of the patient. Resections by the intra-urethral route and electrocoagulation give, in general, good immediate results.

This is, however, a delicate operation for the surgeon who has had wide experience with its technic, and it is contraindicated in cases presenting very large or bleeding prostates in which neoplastic degeneration is suspected. The statistics of American surgeons are impressive.

A long discussion arose between the members of the congress concerning their results. Professor Marion prefers prostatectomy in all cases in which the condition of the patient justifies the operation and also in cases in which other methods have proved ineffective. In patients unable to withstand prostatectomy, and in patients strong enough to endure the operation but who have only small adenomas, one can attempt destruction of these by conservative means. The same methods may be tried to destroy larger adenomas in persons who cannot withstand transvesical prostatectomy. Radium should be reserved for weak patients who could not endure an operation. Dr. Luys defended his forage operation on the prostate and presented statistics to prove its benign nature. But the endoscopic methods encountered opponents, who contended that they were incomplete and did not always prevent infection, hemorrhage or even death. Blanc of Bordeaux, Guisy of Athens, Gayet and Phélip (Lyons) and Chauvin of Marseilles reported a few successful outcomes in very simple cases; but they expressed the opinion that prostatectomy is still the only effective operation with which to combat adenoma of the prostate, especially since advances in technic have reduced the risk of operation. That is the view also of such eminent urologists of Paris as Papin and Pasteau. In fact, Pasteau rejects every other intervention as illusory and dangerous. Many of the advocates of the various substitutes for prostatectomy, with the exception of Luys, resort to endoscopic methods only in special cases.

Numerous further communications dealing with diverse subjects were presented. Phélip of Lyons cited several cases of urinary infection of dental origin, transmitted by the blood stream. Pasteau reported a case of pharyngeal origin. Widbolz of Bern stated that he had secured excellent results in nontuberculous aseptic pyuria by means of intravenous injections of neoarsphenamine in doses of 0.0015 Gm. Mr. Pillet reported some curious observations to the effect that, in alkaline urine, the formation of phosphatic, ammoniacomagnesic calculi is facilitated by pyrexia, a rise of from 1 to 3 degrees in temperature being sufficient to precipitate these crystals when all the elements are combined. Mr. Barbellion called attention to the following test to discover whether a patient has recovered from gonorrhea: After the imbibing of an abundance of beer, massage of the prostate, not followed by lavage or urination within five hours; examination of the urethral secretion for the presence of gonococci. In positive cases, especially if the patient has engaged in coitus, the urine will be found to contain gonococci. In negative cases gonococci will not be found.

Jules Janet and Debains discussed gonococcal autovaccines and expressed a preference for those in which the gonococcus has been killed at the lowest temperature possible, in order not to change its biologic properties. They are superior to stock vaccines because they contain gonococci of the desired strain, and fresh specimens. Jeanbrau and Truc (Montpellier) reported a case of complete retention of urine in a woman for thirteen months, which was immediately cured by the Cotte operation, consisting in resection of the presacral nerve. Dr. Lowsley of New York gave an exposition of three of his procedures in renal surgery. He sutures the wounds of the kidney in nephrotomy with a ribbon of catgut, which envelops the organ and which is held in place by passing it, cut into several strips, into the fibrous capsule. He arrests hemorrhage of the parenchyma by introducing fatty tissue into the wound, which he regards as the best type of hemostatic. He performs nephropexy by fastening the kidney by two strips of chromic catgut, one at each of its poles, the one being attached to the twelfth rib and the other to the quadratus lumborum muscle.

Dr. Harvey Cushing Honored

The ceremonies in connection with the formal reopening of the University of Paris, this year, were attended by the president of the republic. The several scientists who were accorded the title of doctor honoris causa were all present, each wearing the garb of his own university. Dr. Cesar Vivante, professor of law at the University of Rome; Professor Levi-Civita of the faculty of sciences, University of Rome; Mr. Puig y Cadalfach, president of the Catalan Institute of Barcelona; Professor Van Itallie of the University of Leyden; Prof. Franz Volhard of the University of Frankfort, and Dr. Harvey Cushing of Yale University, on whom special honors were bestowed. Professor Roussy, dean of the Faculté de médecine, made this declaration: "I render public homage not only to one of the greatest surgeons of the United States of America but also to the man whose work in anatomy, physiology and clinical surgery has brought great progress to modern neurology and to the ingenious inventor whose new forms of technic have made it possible, during the past thirty years or more, to save thousands of lives." Then, after enumerating the chief works of this master of neurology and rendering homage to the surgeon and teacher, Professor Roussy concluded with these words: "Georges Clemenceau, then minister of war and president of the cabinet, in recognition of your valuable aid given to the ambulance companies, during the war, in the region of Neufchâteau, desired, at the time of your departure from France, to give a testimonial of his esteem and gratitude. His gift was his doctor's thesis in medicine, submitted in 1865, which is a very rare booklet. This esteem, this gratitude, and this admiration, the University of Paris and the medical profession of France are happy to take this occasion to endorse."

BERLIN

(From Our Regular Correspondent)

Nov. 13, 1933.

Anemia Due to Goat's Milk

Professor Rominger, director of the university children's clinic in Kiel, has begun a research on the pathogenesis and therapy of anemia due to the use of goat's milk. On the basis of comprehensive studies on metabolism in healthy and sick children who were nourished with goat's milk, and observations in animal experiments, he discussed the question as to whether anemia due to goat's milk is the result of a trophotoxic or a trophopenic injury. Clinical observations show that it is at least improbable that goat's milk as such has any toxic qualities. Feeding experiments on young growing white rats led to the conclusion that an exclusive diet of cow's milk produces an anemia of the chlorosis type (hypochromic anemia), which is evidently due to a lack of iron, since it can be both prevented and cured by the administration of iron. An exclusive diet of goat's milk produces in very young white rats an anemia of the pernicious type (hyperchromic anemia). This experimental hyperchromic goat milk anemia cannot be cured solely by the administration of iron; nor is it due to a lack of vitamin C. Furthermore, it can neither be produced nor exacerbated by the administration of unsaturated volatile fatty acids of goat's milk. It can, however, be prevented and cured by the injection of liver extracts. It is a complex deficiency disease, in which the factor that counteracts any tendency to perniciousness —namely, the so-called extrinsic factor—is absent, and likewise iron. The good effects of a combined liver extract and iron therapy were observed by Rominger. Within four weeks, therapeutic results could be secured such as were obtained with the former therapy, even along with the application of

blood transfusions, usually only after several months. According to these observations, arsenic, artificial heliotherapy and extirpation of the spleen are no longer indicated. From the standpoint of prophylaxis, the use of goat's milk without the addition of liver and iron must be avoided; but if these additions are made, there is no objection to goat's milk in the diet of infants. It may be mentioned that goat's milk contains more copper than other kinds of milk.

Adopt Policy of Free Choice of Physician

Previous letters have dealt with the reorganization of the federal krankenkassen system (THE JOURNAL, November 18, p. 1652). At last the controversy that existed in Berlin between the municipal administration and the Gross-Berliner Aerztebund, with reference to the proper care to be given to the so-called welfare aid unemployed, has been settled. To this class belong those who, since they have no income, pay no dues to the krankenkassen. The municipality itself must provide for them. Until recently, members of this group in some districts of the city had to apply, in case of illness, to a certain "welfare physician," who devoted only part time to this service. This arrangement did not result in very confidential relations between physician and patient. Furthermore, the number of part time "welfare physicians" was so small that often unpleasant situations occurred owing to the crowded conditions prevailing during consultation hours. In other districts, those in need of aid had a free choice of physician, but the compensation of the physicians was very small. Both parties, therefore, failed to be satisfied with this system, and the medical profession of Berlin carried on a campaign for years to secure for such patients and for themselves something more satisfactory. Now, the system of part time physicians has been abolished in Berlin. The physicians now receive a fixed amount annually for each patient who, over an extended period of time, belongs to this group, while intermittent care given certain patients is paid for according to service rendered. As a result of a new system in which the vertrauensärzte, or confidential physicians, of the krankenkassen, play an important part, there seems to be some expectation that the superfluous use of medicines will be checked. For this purpose, a central prescription control center has been established at the municipal bureau of health. Domiciliary treatment will be restored to its former position, to which it is entitled. Thus, the old demand of the physicians for a free choice of physician by patients has been set up in Berlin, at least as far as the physicians admitted to panel practice are concerned. In view of the financial condition of Berlin, it is impossible to satisfy all the financial desires of the physicians.

In Hamburg, the waiting room problem has been taken up by the Hamburg "chamber of physicians," which has declared that it is absolutely inconsistent with the idea of popular sovereignty to make, in a physician's waiting room, any distinction with respect to patients, as to whether they are "welfare patients," krankenkasse patients or private patients. Hence, dating from this announcement, special consultation hours for private patients, and the equipment of special waiting rooms for such patients, are prohibited.

The Berlin Academy for Graduate Training

Although, for decades, facilities for the training of domestic and foreign physicians have existed in the city, Berlin will open in January an academy for graduate medical training. The instructors, who must be teachers in the various specialties, will be selected by the mayor, with the aid of a scientific committee on instructors. The purpose will be to organize graduate medical training on a uniform basis and to afford an opportunity to general practitioners, specialists, assistant physicians in the municipal hospitals, and physicians in other communal welfare departments, to participate in courses and in practical activities. It is the plan to organize, for the benefit of physicions of Berlin and vicinity who have little leisure in the evenings, lectures and demonstrations covering one or two hours a week, for a period of from two to three months, in many different hospitals of Berlin. In addition there will be eight to fourteen day courses on selected subjects, with practical demonstrations. To give physicians the opportunity to do practical work from clinical points of view, whole-day clinical instruction courses with the chief emphasis on practice work will be held in the municipal hospitals, which, it is thought, will make for a better understanding between the general practitioner and the specialist.

Further Details on the Higher Institutions of Learning

Reorganization of the higher institutions of learning (THE JOURNAL, Dec. 16, 1933, p. 1980) is proceeding in various directions.

The league of the German institutions of higher learning, the conference of German rectors, the federation of German university teachers, the Bavarian league of university teachers, and the society "The German State," have voluntarily combined, with a view to promoting a federal organization of all German institutions of higher learning and of the teaching personnel of such institutions. The new organization, under the supervision of the federal ministry of the interior, will protect the cultural importance of the German institutions, also in relation to foreign countries, and will cooperate in renovating the German system of higher instruction in agreement with the national-socialist world-view and in the endeavor to make the universities an organic part of the German body politic and the national life. Prof. Herwart Fischer, ordinarius in legal medicine at the University of Würzburg, has been chosen as leader of the new organization.

After the beginning of the winter semester, the training school, which has assumed the task of giving the new type of students preliminary training in statecraft, will reopen. The objective of this political training is the acquisition of knowledge that will fit the student to play a prominent part in national politics. The University of Berlin student body has published a work schedule and study plan that illustrate the essentials of this new movement, the fachschaftsarbeit. According to this plan, this work is compulsory for all students of the second and third years. A special training of a wider scope has been prepared for the first year students. Those who have attended German universities three years are not required to participate in the fachschaftsarbeit but it is recommended that they do so. The work is not compulsory for women, but they will be admitted to the courses as volunteers.

Depending on whatever is their major subject, the students are divided into six different groups, or so-called fachschaften. The group interested in popular education will study conditions in eastern Germany, the minority problems of the last century, and German-Russian relations. The group interested in German law will study "The State" and the protection of races and of nationality in the penal code. In the group interested in political economy, the colonial director of Greater Berlin, of the national-socialist party, will speak on national-socialism and colonies. The theological group will discuss symbolics, or historical theology, and its significance for our day—particularly Luther, Melanchthon and Calvin. The medical group will study race problems and social problems. The group interested in the natural sciences will be divided into four subgroups: biologic, geographic, mathematicophysical and chemical. At the close of the semester, every student receives a certificate setting forth the work performed. The movement will have a special journal, called *Wissen und Dienst*, to be edited by the director of the Berlin circle of the German student federation.

Number of Health Insurance Societies in Germany

From the reports of the head insurance bureaus, it will be seen that at the close of the year 1932 there was a total of 6,638 krankenkassen; namely, 2,046 communal krankenkassen (ortskrankenkassen), 428 rural krankenkassen, 3,266 krankenkassen of industrial units (betriebskrankenkassen), and 798 krankenkassen of guilds (innungskrankenkassen). The last two categories show a reduction in membership, which has been further accentuated since the reorganization of the whole federal health insurance system.

Professor Magnus to Direct Surgical Clinic

The university surgical clinic in the Ziegelstrasse in Berlin (not the clinic in the Charité Hospital, which is under the direction of Professor Sauerbruch) had been closed (by the former government). The new government announced, several months ago, that this famous clinic (Professor Bier being the last incumbent) would be reopened. To this important post Prof. Richard Magnus, chief physician of the Bergmannsheil Hospital in Bochum, has been called. Magnus, who is 50 years old, is a pupil of Friedrich, König and Guleke. The hospital of which he has been a director is regarded as the largest hospital in Europe for patients who have suffered accidental injuries. Magnus's numerous publications deal chiefly with the treatment of fractures, war surgery and problems concerning joint infection.

Professor Siebeck Summoned to University of Berlin

The chair of internal medicine and the directorship of the first University Medical Clinic, formerly held by Professor His, had been vacant some time; but now Prof. Richard Siebeck, clinician of the University of Heidelberg, has been summoned to occupy the post. Volhard of Frankfort-on-Main recently rejected the offer, and, still earlier, Schittenhelm of Kiel was not inclined to move to Berlin. Siebeck is 50 years old. At the University of Heidelberg, he has been occupying the chair of his former teacher Krehl. His published writings deal chiefly with disturbances of the circulatory and respiratory organs, and with the kidneys and with the water balance.

JAPAN

(From Our Regular Correspondent)

Oct. 28, 1933.

Vaccination Against Typhoid

Typhoid vaccination has again become the subject of heated discussion in medical circles all over the country. Typhoid vaccination has been widely adopted in places exposed to this disease, and yet its absolute potency is never relied on. At a meeting of the Kitasato Research Institute, Dr. Kobayashi of the Keio Medical College recently criticized the value of typhoid vaccination. His paper provoked discussion in various circles throughout the country. His criticism was directed chiefly against the statistical reports of the metropolitan police board. He said that it is very difficult to form a conclusion on the potency of vaccination merely on the basis of statistical research for, in a sudden outbreak of typhoid, complete protection could not be expected.

Dr. Inokuchi, chief of the prevention bureau of the metropolitan police board, says that in the metropolis in the past eight years about 1,600,000 people have been inoculated almost every year. The percentage that contracted the disease among the inoculated has varied from 3.5 in 1925 gradually down to 0.67 in 1930. On the other hand, the death rate among the inoculated averaged 15 per cent, more or less, but among the noninoculated was almost 20 per cent every year. He insists that the smaller death rate must be attributed to the increase in the annual inoculations, which tends greatly to reinforce the potency of the immunization. He says that of late some people have been inclined to lessen the amount of vaccine used for fear of reactions, but even a smaller quantity and a less potent vaccine, if repeated every year, is a certain preventive. Where sanitation is so poor as in the capital, this inoculation should be considered an essential measure for the time being. Dr. Kajitsuka, dean of the military medical school, says that the army believes in vaccination, even if not in its absolute value, and if an improvement in the kinds of vaccine to be inoculated could be attained, a much greater effect might be realized. Statistically, the death rate in the army has been lowered through yearly inoculation. On the other hand, according to reports given by Dr. Kawaguchi, chief of the isolation hospital of Tokyo, hardly any difference could be recognized between the vaccinated typhoid patients and the nonvaccinated, at least in his hospital. Toxic conditions and nervous system complications seemed rather more severe among the inoculated, among whom the death rate was often higher. Of course, sometimes an inoculated person had a mild attack of typhoid. He therefore was bewildered as to the effect of the inoculation. Some discharged soldiers who had been inoculated while in the army, he says, contracted severe typhoid soon after their discharge. He doubts its essential effect.

Dr. Urabe, medical expert of Nagasaki, a seaport, reported in detail his investigations, saying that since 1926 the number of those who were inoculated had increased every year but that the number of cases of typhoid had increased or remained the same yearly.

In 1931 a sudden outbreak of typhoid took place there, and the rate was quite high. He concludes that the period of immunity is uncertain. He reported 146 cases occurring within one month after vaccination, sixty-six cases within two months, and forty-one cases within three months. Inoculation during an epidemic therefore seems to be of comparatively little use. He adds that a little vaccine should be given frequently rather than a great deal at one time. About 10 per cent of those vaccinated were obliged to go to bed on account of reactions. This was caused by negligence in the observation of the specific type of constitution of some people, and also by giving them too much vaccine. He continued that the great loss of money and of time, both by the public and by the municipal office, should be considered in view of the comparatively small value of vaccination. He earnestly longs for some better measure in typhoid prevention.

Dr. Tashiro, surgeon commander of the imperial navy, in opposition to the former opinion, said that he has every reason to believe that the period in which inoculation remains potent is about six months. In the navy every sailor is vaccinated twice a year. The reason typhoid may be contracted in the first month after vaccination he attributes to the fact that the immunizing bodies develop insufficiently during that period to be really potent. In Moji, another seaport, the typhoid cases were about five a month before general inoculation began all over the city, but in April of this year inoculation was given to about 40,000 persons (40 per cent of the whole population) and 4,948 persons were given vaccine orally. In May, thirteen cases, and in June, twenty cases suddenly broke out among those who took the vaccine orally, not among those inoculated.

On the contrary, in the city of Ito, near Tokyo, vaccination against typhoid has been regularly done since 1921, accompanied by improved sanitation necessary to annihilate typhoid. In 1921, 139 cases were reported before inoculation, but the number of cases has gradually and regularly decreased year by year. In 1932, only three cases were found. The city authorities and the physicians concerned are firm believers in the effectiveness of vaccination. On the whole, more statistical investigations must be reported to decide the question. Many believe that the absolute value of inoculation will be established sooner or later.

Free Medical Advice to Athletes

In the physical development research institute of Japan, attached to the educational department, an athletic medical consultation office has been opened. Any one who needs advice on physical training may have a medical examination free of charge. Sports and competitive games are prone to lead young people into some danger of overexertion. The office is in charge of Drs. Saito and Shiraishi, the former being the chief of its internal medicine bureau, the latter of the surgical section. From the first day it was open, many athletes and players, both amateur and professional, visited the office to be examined, for this sort of medical advice has long been desired.

Personals

Dr. K. Futaki has retired from Tokyo Imperial University, where he held the chair of epidemic diseases.

Dr. R. Arima, an authority on tuberculosis, was decorated by the Hungarian government especially for the donation of his tuberculosis vaccine AO, which he presented while he was staying in Hungary last year.

Chian Sagara (1830-1909) was the first president of the Tokyo Imperial University and the director of its medical department. He adopted German medicine in this country for the first time. The present site of the Tokyo Imperial University was chosen by him. But he fell a victim to slanderous tongues and was obliged to retire from his high position. His after-life was miserable and he was forgotten. On the proposal of prominent people, including the war minister, Marquis Okuma and Viscount Dr. Ishiguro, a monument will be erected to this benefactor of Japanese medicine.

Marriages

BYRON LUDWIG STEGER to Miss Delene Elizabeth Lobdell, both of Huntington, Ind., at Wabash, November 15.

THOMAS H. TOMLINSON, Thomasville, N. C., to Miss Mary Sweeney of Baltimore, at Greensboro, November 16.

KUTCHER THREEFOOT KLEIN to Mrs. Iva W. Lovell, both of Meridian, Miss., at Jackson, in November.

CHARLES NEIL MCBRYDE, Ames, Iowa, to Mrs. Virginia Abbey Swergard at Nashua, September 2.

JOHN M. RENEHAN to Miss Helen O'Donnell, both of Ansonia, Conn., at Milford, November 6.

HAROLD D. WALTZ, Denver, to Miss Eleanor Frances Bassett of New Orleans, November 29.

THOMAS ROBERT PLUMER, Trivoli, Ill., to Miss Helen Cornelius of Peoria, November 15.

WILLIAM WINSLOW WIEDEMANN, JR., to Miss Sue Amstutz, both of Toledo, Ohio, October 10.

IRVIN WILLIAM WILKENS, Indianapolis, to Miss Delta Newton of Clifford, September 16.

CLIFTON ROSS TITUS to Miss Mildred Carolyn Mitchell, both of Bassetts, Va., October 7.

FREDERICK S. WOLF, Baltimore, to Miss Betty Saunders Stern of New York, October 4.

FRANCIS J. ROBBEN, Willow Grove, Ohio, to Miss Elizabeth McGary of St. Louis, recently.

ROYAL V. SHERMAN, Minneapolis, to Miss Elizabeth Alberts of St. Paul, November 18.

JAMES J. MORROW, Austin, Minn., to Miss Ruth A. Sargent of Red Wing, recently.

JOSEPH WEBB, Springfield, Ohio, to Miss Florence Barlow of Urbana, recently.

JACOB D. PINSON to Miss Leah Freeman, both of Philadelphia, August 3.

HUGH WELLMEIER to Miss Helen H. Frazier, both of Piqua, Ohio, October 11.

BURT HUBBARD to Miss Stella Carr, both of Lima, Ohio, recently.

MILTON PLOTZ to Miss Helen Ratnoff, both of Brooklyn, recently.

Deaths

Leon Dennis Pierce Clark ✠ New York; University of the City of New York Medical Department, 1892; member of the Connecticut State Medical Society, the American Neurological Association, American Psychoanalytic Association, American Psychiatric Association and the Association for Research in Nervous and Mental Diseases; member and past president of the National Association for the Study of Epilepsy, American Psychopathological Association, New York Neurological Society and the New York Psychiatric Society; for many years on the staffs of the Manhattan State Hospital, Craig Colony for Epileptics and the New York City Children's Hospital; trustee to the Letchworth Village for Mental Defectives, Thiells, N. Y.; author of "Clinical Studies in Epilepsy," "Psychohistorical Studies of Notable Historic Characters" and of numerous monographs on nervous and mental diseases, and co-author of "Diagnosis of Organic Nervous Diseases" and "Neurological and Mental Diagnosis"; editor of *Archives of Psychoanalysis*, 1926-1927; aged 63; died, December 4, of heart disease.

Frederick Adam Cleland, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1901; assistant professor of obstetrics and gynecology at his alma mater; member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons; fellow of the American College of Surgeons; served as senior surgeon with the Canadian Expeditionary Force in Siberia; on the staffs of the Toronto General Hospital, St. John's Hospital, Grace Hospital and the Women's College Hospital; aged 59; died suddenly, November 26, of heart disease.

William Le Moyne Wills, San Marino, Calif.; University of Pennsylvania School of Medicine, Philadelphia, 1882; member of the California Medical Association; fellow of the American College of Surgeons; formerly professor of clinical surgery, University of Southern California College of Medicine, Los Angeles; at one time member and vice president of the state board of health; for many years on the staff of the Children's Hospital, Los Angeles; aged 80; died, December 3.

David Thomas Bowden, Jr., Leonardtown, Md.; Johns Hopkins University School of Medicine, Baltimore, 1918; at one time assistant professor of epidemiology and public health, University of Oklahoma School of Medicine, Oklahoma City; served during the World War; formerly assistant state health officer in Oklahoma, health officer of Phelps County, Missouri, and St. Mary's County, Maryland; aged 41; was found dead, November 2, of heart disease.

Andrew Jackson Giesy, Portland, Ore.; Jefferson Medical College of Philadelphia, 1882; member of the Oregon State Medical Society; emeritus professor of clinical gynecology, University of Oregon Medical School; at one time member of the city board of health; formerly on the staff of the Good Samaritan Hospital; aged 80; died, November 9, of heart disease.

Richard Frothingham, New York; Harvard University Medical School, Boston, 1892; member of the Medical Society of the State of New York and the American Laryngological Association; formerly assistant professor of otolaryngology, Columbia University College of Physicians and Surgeons; aged 67; died, December 5, of heart disease and pneumonia.

Karl Forbes Snyder ✠ Freeport, Ill.; Northwestern University Medical School, Chicago, 1902; fellow of the American College of Surgeons; on the staffs of the Evangelical Deaconess, St. Francis and Freeport Methodist hospitals; aged 57; died, November 28, of a self-inflicted bullet wound.

Hartland Cyrus Johnson, St. Paul; College of Physicians and Surgeons of Chicago, 1885; an Affiliate Fellow of the American Medical Association; aged 73; on the staff of St. Luke's Hospital, where he died, November 26, of coronary thrombosis and hypertension.

David Autrey, Marietta, Okla.; Memphis (Tenn.) Hospital Medical College, 1900; member of the Oklahoma State Medical Association; past president of the Carter County Medical Society; formerly county health officer; aged 66; died, November 21, of heart disease.

Francis Regis Harrison, East Liverpool, Ohio; University of Pennsylvania School of Medicine, Philadelphia, 1900; member of the Ohio State Medical Association; on the staff of the East Liverpool City Hospital; aged 54; died, December 3, of heart disease.

Ola Putman ✠ Marceline, Mo.; Rush Medical College, Chicago, 1901; formerly secretary of the Linn County Medical Society; aged 55; proprietor of the B. B. Putman Memorial Hospital, where he died, December 4, of coronary thrombosis.

Lamartine O. Dudgeon, Sweetwater, Texas; University of Texas School of Medicine, Galveston, 1903; member of the State Medical Association of Texas; on the staff of the Sweetwater Clinic Hospital; aged 57; died, October 1.

Henry Langholz, Oakharbor, Ohio; Northwestern Ohio Medical College, Toledo, 1888; member of the Ohio State Medical Association; aged 74; died, December 8, in the Pool Hospital, Port Clinton, of heart disease.

Alpheus Hartley Wood, Emporia, Va.; Medical College of Virginia, Richmond, 1927; member of the Medical Society of Virginia; aged 35; died, September 28, of acute nephritis and pulmonary tuberculosis.

Charles Elmer Park, Yuankiang, Yunnan, China; Chicago College of Medicine and Surgery, 1913; an Associate Fellow of the American Medical Association; medical missionary; aged 52; died, August 17.

Homer **Holcomb Knight,** Detroit; University of Minnesota Medical School, Minneapolis, 1930; aged 28; on the staff of the Herman Kiefer Hospital, where he died, October 30, of pneumonia.

Sigismund Emil Fredman, San Francisco; Imperial University of Jurjev, Russia, 1894; Imperial Military Medical Academy, St. Petersburg, Russia, 1902; aged 62; died, August 9.

Thomas Hamilton Burch, Ridgewood, N. J.; University of the City of New York Medical Department, 1880; aged 76; died, November 27, of cerebral hemorrhage and hemiplegia.

James Madison Bannister, Snyder, Texas; Southwestern University Medical College, Dallas, 1907; served during the World War; aged 54; died, October 12, of heart disease.

William B. Johnston, Ellicottville, N. Y.; University of Buffalo School of Medicine, 1881; member of the Medical Society of the State of New York; died, October 23.

Marquis Ernest Gilmore ✠ Fort Worth, Texas; Northwestern University Medical School, Chicago, 1900; aged 63; was killed, December 2, in an automobile accident.

M. Josephine McChesney, Osceola, Neb.; State University of Iowa College of Homeopathic Medicine, Iowa City, 1888; aged 82; died, November 10, of senility.

Frederick H. Snow, San Diego, Calif.; University of Wooster Medical Department, Cleveland, 1879; aged 79; died, in November, of cerebral hemorrhage.

Clement Tazwell Branch, Camden, N. J.; Howard University College of Medicine, Washington, D. C., 1900; aged 64; died, November 30, of heart disease.

Robert Babcock, Albany, N. Y.; Albany Medical College, 1884; aged 76; died, December 8, of injuries received when he was struck by an automobile.

Lorenzo T. Potter, Jersey City, N. J.; Chicago Medical College, 1880; aged 74; died, November 22, in New York, of carcinoma of the mouth.

Isaac **Noel Stowe,** Atlanta, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1893; aged 62; died, September 7, of heart disease.

William Harry Tatman, Bellaire, Texas; Medico-Chirurgical College of Kansas City, 1901; aged 64; died, September 19.

Theodore W. Culp, Ava, Ill.; Missouri Medical College, St. Louis, 1888; aged 68; died, November 19, of myocarditis.

William Jackson Cole, South Miami, Fla.; Medical College of Evansville, Ind., 1877; aged 83; died, November 10.

Andrew Adalbert Fabian, Larksville, Pa.; Jefferson Medical College of Philadelphia, 1915; aged 45; died, November 2.

Charles H. Hubbard, Swarthmore, Pa.; Hahnemann Medical College of Philadelphia, 1883; aged 83; died, November 12.

Archibald E. Beaton, Boston; Baltimore Medical College, 1896; aged 66; died, November 23, of coronary thrombosis.

Norman C. Hunter, Laurinburg, N. C.; Medico-Chirurgical College of Philadelphia, 1899; aged 58; died, November 16.

Andrew Patrick Owens, Texarkana, Ark.; Louisville (Ky.) Medical College, 1877; aged 85; died, October 15.

Howard Gray Martin, Los Angeles; Cooper Medical College, San Francisco, 1902; aged 56; died, October 20.

Aubrey Horatio Staples, Oakland, Calif.; Baltimore Medical College, 1896; aged 59; died, October 14.

William Harrison, Marshall, Mo.; St. Louis Medical College, 1874; aged 83; died, September 18.

Bureau of Investigation

AGAIN THE QUESTIONNAIRE NUISANCE

Franklin M. Goodchild, M.D., Turns His Attention from Soaps and Cooking Fats to Motor Cars

Time and again this department of THE JOURNAL has called attention to the plague of questionnaires with which the medical profession is afflicted. Let it be admitted that some responsibility for this condition rests on our profession, because so many of us, with easy-going tolerance, fill out such questionnaires instead of putting them in the ash-can where they belong. Most of these inquiries come from advertising agencies or their satellites. Their object is to get, at the expense of a postage stamp, an "expert opinion" that can be twisted in some way to sustain the "health angle" that the advertising agency wants to use in crying the wares of its clients. Occasionally the questionnaires come frankly from the advertising agencies themselves. These, at least, have the virtue of being above-board, even though the impertinence is not diminished. Many of them, however, are sent out under some high-flown name such as "Modern Research Society," "Medical Research Bureau," "National Research Bureau," or some similar appellation. Occasionally they come out under the name of an individual physician.

The latest questionnaire that has been sent to physicians in the past week comes from Dr. Franklin M. Goodchild, whose stationery carries the address Room 1516, 1250 Sixth Avenue, New York City. Dr. Goodchild, according to the records of the American Medical Association, was born in Philadelphia in 1891, holds a diploma from Columbia University College of Physicians and Surgeons, 1918, and a New York license of the same date. He is not a member of his local medical society or, of course, of the American Medical Association.

The files of the Bureau of Investigation disclose that more than three years ago—in March, 1930—Dr. Goodchild was sending out a questionnaire on the stationery of one Percival White, which described Mr. White as a "Research Counsellor" and Dr. Goodchild as belonging to Mr. White's "Medical Department." Incidentally, the Bureau of Investigation developed the fact that Percival White was one of the owners of an advertising agency known as White and Parton, Inc.

Percival White, through Dr. F. M. Goodchild, was, it seems, interested in having physicians answer five questions relative to the alleged advantages "of the two distinct classes of soap —white soap and colored soap." This calls to mind a similar questionnaire sent out in January, 1929, by the editors of the *Medical Review of Reviews,* who wanted to know of physicians whether they recommended white or colored soap, and those that are perfumed or those that are free from odor. This particular questionnaire was referred to in an article on the subject appearing in this department of THE JOURNAL, March 23, 1929.

Dr. Goodchild in his letter of March 4, 1930, stated that it was his intention to make public "through the daily press and other mediums" the results of his survey of white and colored soap. Sure enough, it was only a few weeks later that there emanated a mimeographed statement sent broadcast to publishers and headed "Physicians Draw Color Line in Soap— White Soap Triumphs Over Colored in National Survey." Then followed a two-and-a-half page article written in the most approved "inquiring reporter" style and said to be "Authorized by F. M. Goodchild, M.D., 25 West 45th Street, New York City" (this was the address of Mr. Percival White of White and Parton, Inc.). Dr. Goodchild's "story" was to the effect that he had received replies on the subject of white and colored soap from 205 physicians and nurses although just what proportion of the 205 were physicians and what proportion were nurses was not stated. Of this group, described as "medical authorities," 199 reported "that they had noticed foreign matter in colored soap, while they had found white soap generally free from it," while only six of the same group "reported that they found no harmful ingredients in colored soap."

Dr. Goodchild's article stated further that "most of the health officers and physicians who expressed themselves believed that colored soap predominated in producing harmful effects," such effects including dehydration dermatitis or other skin trouble, roughness, dryness or chapping. "The white soap, on the contrary, was not observed to disturb the skin." In order, doubtless, to lend an air of verisimilitude to an otherwise bald and unconvincing statement, Dr. Goodchild gave the names and addresses of forty-nine persons who, he claimed, had favored white soap; among these were several physicians who hailed from various parts of the United States. From the east there were six physicians listed, coming from the states of New York, Maryland (two), Vermont, Rhode Island and Ohio. In the middle west nine physicians succumbed to the questionnaire—three from Illinois, two from Michigan, three from Missouri, and one from Indiana. Only two states in the west furnished men who answered Dr. Goodchild's letter: California and Colorado. These, with one physician from West Virginia, completed the list. The remaining names out of the forty-nine given were those of laymen, some of them alleged to be registered nurses, others superintendents of hospitals, sanatoriums and infirmaries. Summed up, according to Dr. Goodchild's "release," one hundred and sixty-three "medical authorities" were said to have "registered themselves in favor of white soap, and only seven for colored." Which must have been very satisfactory for Dr. Goodchild or Mr. White.

As already stated, Dr. Goodchild's interest in the question of the color of soap seemed to extend from March, 1930, until May, 1930. By October, 1930, this inquiring medical reporter had turned his attention to cooking fats, with the very obvious effort to accumulate data to prove that vegetable fats are superior to animal fats for cooking purposes. This time Dr. Goodchild's questionnaire was sent on stationery bearing his name and not that of Mr. White. However, the address was 25 West 45th Street, the address of Percival White and White and Parton, Inc. Was it a case of "the voice is Jacob's voice, but the hands are the hands of Esau?" Dr. Goodchild's vegetable-fat questionnaire went, in addition to physicians, also to those connected with educational institutions, such as those in charge of home economics departments of universities and colleges. The leading character of the doctor's questions can best be brought out by quoting verbatim one or two of them:

"Do you agree that vegetable fats are more wholesome than animal fats because they are cleaner and sweeter and do not so readily undergo decomposition changes?"

"Do you agree or disagree with that medical opinion frequently expressed, that vegetable fats are more digestible than animal fats?"

"In your opinion, are there certain diseases in which a vegetable diet is very important? If so, is gastric ulcer one of them, and what others could you mention?"

Just what results Dr. Goodchild got in his vegetable-fat questionnaire, we do not know, as we were not favored with any mimeographed or other material sent out either by Dr. Goodchild or his employers—if any—on the subject.

Two years later, in October, 1932, Dr. Goodchild had returned to his first love, soap, and was again circularizing physicians, particularly dermatologists. The doctor was still using stationery bearing his name, but his address had changed from 25 West 45th Street to 130 West 42d Street. From the letter sent to physicians, it appears that Dr. Goodchild was greatly concerned over the fact that "the claims of certain soaps for medicinal and antiseptic qualities are greatly exaggerated." He gave it as his opinion, and it is an opinion that all rational people will agree with, that the main function of soap is to cleanse. This was the doctor's thesis, and "in the interests of enlightening the public on the real facts," he was writing to the various physicians and "other leaders" in the field, not, it seems, in order to get an unbiased expression of opinion, but, as he admitted in the introduction to his questionnaire, "to obtain authoritative *confirmation*" of the thesis already laid down. Here again the doctor's questions were strictly leading in character, thus:

"Do you agree that all soaps have antiseptic action, regardless of the addition of any special ingredients?"

"Do you agree that the main function of soap is to cleanse, not to cure?"

"Do you agree that to be suitable for general daily use, a soap should be pure, mild and neutral?"

Just how many replies Dr. Goodchild got and whether they fitted in with the problem that he had, we have no means of knowing. We do know that one well-known dermatologist in the east notified Goodchild very properly that when he gave expert opinion to reputable commercial concerns, he always charged an adequate fee for such work.

In his present questionnaire, Dr. Goodchild abandons what might be called the chemical field—soap and vegetable fats—and enters the mechanical field—motor cars. He is still writing on stationery that carries his name, but the present address given is Room 1516, 1250 Sixth Avenue, New York City. He writes to the physician and asks him, "as a leader in your field," for his views on the "individual springing of automobile wheels or 'knee-action,' as it is sometimes called." Dr. Goodchild then goes on to state the various alleged good points on this "improvement in motor car construction recently pioneered in by General Motors." After detailing the virtues of the improvement—presumably with the idea that the recipient of his letter may realize that Dr. Goodchild wants a favorable report—the doctor states that he is "personally much interested in this development" and asks the doctor to whom he writes whether he does not "agree that this development is worthy of approval." He closes his letter with the statement that unless the physician to whom he writes advises to the contrary, he plans to use the physician's name and statements for publication, "along with those of other leaders."

After this article was in type and ready to go on the press, the Bureau of Investigation learned that Dr. Franklin M. Goodchild is conducting his "survey" in connection with the so-called knee-action in motor car construction for Mr. Percival White, "marketing counsellor," 1250 Sixth Avenue, New York City.

Correspondence

PRODUCTION OF ENDOMETRIAL GROWTH IN CASTRATED WOMEN

To the Editor:—In the discussion of our second experiment, described under the title "Production of Endometrial Growth in Castrated Women: The Minimum Dosage of Theelin That Is Required" (THE JOURNAL, November 4, p. 1466), Dr. Emil Novak states that "the method has been used, as Dr. Werner and Dr. Collier know, particularly by Clauberg and Kaufmann in Germany."

The statement by Dr. Novak is ambiguous. While we were the first to produce the growth phase and uterine bleeding, among other phenomena, in the uterus of castrated women by the use of theelin, one might infer from his discussion that this is not the fact. We believe that Dr. Novak did not intentionally wish to leave this impression. We feel that he wished to convey the fact that Dr. Kaufmann has also done work of this nature and has produced the premenstrual endometrium, but not until after we had completed and published an account of our work with theelin in a preliminary report in the *Proceedings of the Society for Experimental Biology and Medicine* in June, 1932.

As proof of the foregoing statement regarding the priority of our work, we cite the article of Dr. Kaufmann published in the *Zentralblatt für Gynäkolgie* in October, 1932, in which he reports four experiments performed by him:

EXPERIMENT 1.—In 1928 he injected 2,320 mouse units of "follikulin" into a castrated woman over a period of twenty-two days. He states as a result of this treatment that he "was unable to demonstrate any effect on the endometrium of this patient."

EXPERIMENT 2.—In 1930 he injected 21,500 mouse units of "Brunsthormon" over a period of thirty-two days and 42 units of corpus luteum hormone. He states that "curettage following this experiment failed to show any endometrial effect."

EXPERIMENT 3.—In February, 1932, he injected 100,000 units of progynon benzoate in a period of ten days. He states that again he "was unable to produce a functioning endometrium."

EXPERIMENT 4.—In June, 1932, he injected 10,000 units of progynon benzoate daily for twenty-one days (total, 210,000); this was followed by seven daily injections of 5 rabbit units of corpus luteum hormone. He was successful in producing a premenstrual endometrium for the first time by this experiment.

As regards work by Carl Clauberg, an article was published by him in the *Zentralblatt für Gynäkologie*, Oct. 8, 1932, entitled "The Action of the Luteal Hormone, the Specific Hormone of the Corpus Luteum, on the Human Uterus." In this article he remonstrates with Dr. Kaufmann for having claimed priority, but he admits not having published his work up to that time.

In contrast to this work by Kaufmann, we began our first experiment, Jan. 10, 1932, using five castrated women, four of them with intact uteri, while Kaufmann used one castrated woman. During the first twenty-eight day period each patient received 200 Allen-Doisy rat units of theelin daily. Curettements were done before beginning treatment and each week thereafter for three weeks. At the end of two weeks we were able to show marked endometrial growth in all four patients and uterine bleeding during and at the end of the experiment.

This experiment was completed, April 22, 1932, and reported at the St. Louis University seminar in May, 1932; a preliminary report was published in the *Proceedings of the Society for Experimental Biology and Medicine* in June, 1932, at which time Kaufmann was beginning his first successful experiment on one castrated woman, the report of which was not published until October, 1932. Our complete report was accepted for publication in THE JOURNAL in September, 1932, and published in THE JOURNAL, March 4, 1933.

AUGUST A. WERNER, M.D.,
W. D. COLLIER, M.D.,
404 Humboldt Building. St. Louis.

USE OF ERGOT TO CONTRACT CAPILLARIES IN PURPURA

To the Editor:—Recently we have had a patient at Grady Hospital suffering from thrombocytopenic purpura haemorrhagica, probably resulting from intravenous arsenic. He was bleeding continuously from the mucous membranes. There were many large purpuric spots over the body surfaces. The blood examination revealed 2,000,000 red blood cells, 5,000 white blood cells, 65,000 platelets, and clot retraction sixty minutes plus.

Repeated transfusions gave temporary support, yet it seemed that he would bleed to death in spite of all medication.

Finally we administered to him ergot in 1 drachm doses every four hours, and solution of pituitary, 0.5 cc., hypodermically. Following the first two doses of ergot and one hypodermic of pituitary the bleeding diminished. After twenty-four hours slight bleeding again occurred. The medication was repeated, another transfusion was given, and after this his recovery was rapid and progressive. He is now well.

The ergot and solution of pituitary were suggested by me because I have long felt that the pathologic physiology must be intimately related to the capillary bed as well as to the platelet deficiency. It is a well known fact that cessation of hemorrhage depends on the contraction of the vessel wall in connection with other factors. It seemed reasonable that, if the capillary walls could be contracted, the bleeding might be stopped, and to do this the ergot and the solution of pituitary were used. In this one instance the result was gratifying. It may be that there is some equal ratio between capillary distention and platelet efficiency; that is, a widened capillary plus deficient platelets would inhibit the hemorrhage defense, whereas a contracted capillary would be enabled to function even with diminished platelets.

This letter is written so that you may describe this method of treatment for the benefit of other physicians who have such cases. I am anxious to know whether others obtain similar results from this procedure.

Heretofore, these patients have been treated with transfusions and other supportive measures. A few spleens have been removed. The mortality has been most discouraging.

The pharmacologists seem to be in dispute as to whether ergot contracts the capillaries or not; it is agreed, however, that the smaller vessels with muscular walls are affected. This may in time aid in contracting the smaller terminals. Solution of pituitary is believed to contract the smaller arterioles and capillaries.

JACK C. NORRIS, M.D., Atlanta, Ga.
Pathologist, Grady Hospital.

HISTORICAL ASPECTS OF ENZYME INVESTIGATIONS

To the Editor:—THE JOURNAL has presented an editorial discussion of the historical aspects of enzyme investigations (The Centenary of the Discovery of Diastase, November 11, p. 1564), which I have read with great interest. Certainly all workers in this field are pleased to see the emphasis placed on the application of this study to the basic medical sciences.

Priority as regards the first scientific description of enzyme activity is apparently not a matter of general agreement and I should like to call attention to some early observations that are quite commonly overlooked. Practically all books on the subject, for instance, place the priority with Dubrunfaut and with Payen and Persoz in 1830 and 1833, respectively, and this has naturally been accepted in the editorial mentioned. The first description of a practical preparation of an active "diastase" product was, no doubt, that by Payen and Persoz. However, in referring to the first observation of enzyme activity, usually no reference is made to the report by G. S. C. Kirchhoff, read before the Royal Academy of St. Petersburg in 1814, "Ueber die Zuckerbildung beim Malzen des Getreides, und beim Bebruehen seines Mehls mit kochendem Wasser" (*J. f. Chemie u. Physik*, Schweigger's, Nuremberg **14**:389-398, 1815). An English abstract of this report was as follows:

A glutinous constituent is separated from wheat meal by washing and is mixed with a paste of potato starch. The pasty stiffness soon disappears and a sugar is formed. The yield of sugar is markedly affected by the experimental temperature, a temperature of 50 to 75 appearing most favorable. The syrup has the sweetness of malt syrup, is fermentable and is partially soluble in alcohol. The soluble component crystallizes from alcohol in very small, white crystals. The insoluble component dissolves in water, is not precipitated by an infusion of nutgalls, and appears to be a modified form of starch. The active glutinous material is almost entirely recovered by filtration; the filtrate is capable of partially converting a fresh quantity of starch. Dilute sulphuric acid completely prevents conversion of starch by the gluten; KOH also deprives the gluten of its activity. Concludes that the formation of sugar in malt is explained and that a starch-sugar transformation is a necessary step in the alcoholic fermentation of amylaceous materials.

This article can be interpreted to include the aspect of separating a crude enzymic agent, a recognition of its catalytic nature and a rough description of its optimum conditions of activity. Although I have emphasized this priority in two books, "A Comprehensive Survey of Starch Chemistry" and "Enzyme Actions and Properties," it has not been recognized by some subsequent books on the subject. This is probably not based on any discrimination or conflicting interpretation but merely on the relative inaccessibility of the reference in question. Apparently the only available set of this journal is in the New York Public Library, at least in America.

Having spent a good deal of time on this point, I was interested to note that priority was really given to Kirchhoff in most discussions up until about 1850 or 1875, and after that

the more ready accessibility of the references to Dubrunfaut and Payen and Persoz simply displaced the priority due Kirchhoff.

Again may I emphasize my agreement with the spirit and general context of the editorial mentioned.

ROBERT P. WALTON,
Tulane University School of Medicine,
New Orleans.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SENSITIZATION TO NEOARSPHENAMINE

To the Editor:—A woman, aged 35, acquired syphilis and came to me with a secondary rash, condylomas, and a 4 + Wassermann reaction. I gave her 0.3 Gm. of neoarsphenamine the first time and 0.45 Gm. the next. The night of the second injection she had chills and fever, which recurred daily until a morbilliform rash appeared five days later. I then put her on 0.5 Gm. of sodium thiosulphate every two days, and the rash is almost gone. I am asking you for a complete outline for her further treatment. Shall I turn to bismuth, and how much shall I give? May I ever use neoarsphenamine again and, if so, in what dosages? Is mercury indicated and, if so, in what form and dosages? Please answer this as soon as possible, as I would like to continue this treatment without delay. Kindly omit name.

M.D., Pennsylvania.

ANSWER.—It is impossible to be sure at present whether this patient has been permanently sensitized against neoarsphenamine. Morbilliform rashes may or may not be the precursors of an exfoliative dermatitis and an expression of permanent sensitization. In view of the fact that the patient has a recent syphilitic infection, it is of the utmost importance to determine this point as promptly as possible; if she is not permanently sensitized, the total duration of her treatment may be much shorter and the hope of an ultimately successful outcome much better than if treatment must be carried on with the heavy metals alone.

There should be no interruption in the continuity of treatment because of this reaction; intramuscular injections of bismuth salicylate, 0.2 Gm. suspended in oil, should be started at once and continued weekly for six weeks. Toward the end of this course of bismuth therapy the sensitivity of the patient for the arsphenamine (including arsphenamine and silver arsphenamine as well as neoarsphenamine) should be tested by means of a patch test (technic described by Schoch, THE JOURNAL, April 16, 1932, p. 1367). If this test is positive (erythema and vesiculation appearing in the tested area in from twenty-four to forty-eight hours), no further arsphenamine may be administered at any time; the patient is permanently sensitized. While a positive patch test indicates sensitization, however, a negative test does not exclude it. Further work with the test has shown that not infrequently it may be negative in an individual who is definitely known to be sensitive.

If the patch test is negative, sensitivity should be tested by cautious intravenous testing. For this purpose, a different arsphenamine product from that originally used should be chosen since, in a few instances, sensitization may be actually drug specific rather than group specific. In this instance, silver arsphenamine is the drug of choice for this purpose. The initial dose should be minute: 25 mg. (0.025 Gm.). The patient should be carefully observed and interrogated for the possible appearance of four phenomena: generalized itching in the absence of a skin rash, the appearance of any skin eruption, fever, and malaise—a knocked-out feeling out of proportion to the size of the dose administered. If any of these phenomena are present, sensitization may be assumed, and the arsphenamines must be permanently discontinued. If none of them are present, the dose may be cautiously increased each week by equally small increments (0.025 Gm.), until either evidences of toxicity appear or an average therapeutic dose is reached. Thus, it will take about ten weeks of careful dosage increase —0.025, 0.05, 0.075, 0.1 Gm., and so on—to attain the therapeutic dose of silver arsphenamine of from 0.2 to 0.3 Gm. The appearance of toxic phenomena (itching, dermatitis, fever, prolonged malaise) at any time is a signal for the end of all attempts at arsphenamine therapy.

During this course of intravenous testing, it is desirable also to perform frequently repeated leukocyte and differential counts. Leukopenia, especially if accompanied by a decrease in granulocytes, is a warning of impending serious trouble; so also is eosinophilia, even if the total white count remains normal.

If either the patch test or the cautious intravenous test already described shows that the patient is sensitized, further treatment must consist of the heavy metals alone. These also should be given continuously if possible, the best method being courses of intramuscular injections of an insoluble bismuth salt, preferably the salicylate, alternating with courses of mercury by inunction. Under these circumstances, the total duration of treatment must be a minimum of three years instead of the average of from fifteen to eighteen months if an arsphenamine can be used.

The spinal fluid should be tested as a routine in any case at the end of about six months of treatment. Should it prove to be positive, it is worth while noting that arsphenamine sensitive patients may be given tryparsamide, a pentavalent drug especially valuable in neurosyphilis, without danger of producing dermatitis.

Incidentally, some workers feel that sodium thiosulphate is of no value whatever in poisoning with the arsphenamines or with other metals. Calcium is probably much more effective.

TENDON TRANSPLANTATION AFTER CUTTING POSTERIOR INTEROSSEOUS NERVE

To the Editor:—Assuming that the posterior interosseous nerve is cut at a point about two inches below the radial head or at the radial head, is there any tendon transplantation operation or any operation that will restore extension at the metacarpophalangeal joints and phalanges? Please omit name.

M.D., New York.

ANSWER.—The subject of peripheral nerve injuries and their treatment received a great stimulus during the World War from the efforts of Sir Robert Jones, Sir Harold Stiles, C. L. Starr, Arthur Steindler, Harry Platt, Dean Lewis, Delagenière, Walther, Tinel and Binesty.

Failures or partial failures after operations on the musculospiral nerve have been successfully treated by tendon transplantation. The operation of Sir Robert Jones of Liverpool consists in the transplantation of the (1) pronator radii teres into the extensores carpi radiales longior and brevior; (2) flexor carpi ulnaris into the extensor communis digitorum and extensor longus pollicis; (3) flexor carpi radialis into the extensor ossis metacarpi pollicis and extensor brevis pollicis.

The results of this operation are striking, a useful and strong hand being obtained—a hand that can be utilized for most of the ordinary occupations. On page 18 of his little book called "Notes on Military Orthopaedics," published by Cassell & Co., Ltd., London, Sir Robert Jones states that in cases of musculospiral injury the uncontrolled action of the flexor group causes the fingers to curl into the palm and the hand to become useless. In such a case (*a*) the flexor carpi radialis and the flexor carpi ulnaris can be transplanted into the paralyzed extensor of thumb and fingers and, (*b*) in addition, the pronator radii teres may be sutured to the two radial extensors.

Jones recommended transplantation of the pronator radii teres and the radial and ulnar flexors in musculospiral paralysis and describes the technic as follows: With the forearm midway between pronation and supination, an incision is made along the radial border of the forearm in its middle third. Under cover of the tendon of the supinator longus, the pronator radii teres will be found where it becomes inserted into the outer border of the radius. From this it is detached and is then inserted into the tendons of the extensor carpi radialis longus and brevis, which lie closely applied to it on the dorsal surface.

A horseshoe incision, with the convexity resting on the back of the carpus, with the two straight sides extending along the radial and ulnar borders, is now made. Through the lateral aspects of this incision the tendons of the carpi ulnaris and radialis are identified and are detached from their insertions as near the carpus as possible.

The tendons are brought round the ulna and radius respectively in a very slanting fashion and are then attached to the extensors of the fingers and thumb, the flexor carpi ulnaris being attached to the extensor longus digitorum tendons of the three inner fingers and the flexor carpi radialis to those of the thumb and index finger.

When the lesion is below the origin of the posterior interosseus nerve, the radial extensors of the wrist are intact and the transference of the pronator radii teres is, of course, unnecessary. Stiles modified the original operation by inserting the tendon of the palmaris longus into the extensor pollicis longus; the flexor carpi radialis into the extensor primi internodii pollicis and the extensor ossis metacarpi pollicis; and the flexor carpi ulnaris into each of the extensor digitorum tendons. The hand is immobilized for two weeks in dorsiflexion, the wrist being kept almost at a right angle, and the metacarpophalangeal and interphalangeal joints being only slightly palmar flexed

to avoid subsequent stiffness. The after-treatment consists of daily massage and electrical stimulation. Recovery is usually complete in from eight to ten weeks, and the position of extension must be maintained until there is return of voluntary function.

The following books and articles may be consulted for further details:

Campbell, W. C.: A Text Book on Orthopedic Surgery, Philadelphia, W. B. Saunders Company, 1930.

Jones, Robert: Tendon Transplantation in Cases of Musculospiral Injuries Not Amenable to Suture, *Am. J. Surg.* **35:** 333 (Nov.) 1921.

Stiles, H. J.: Operative Treatment of Nerve Injuries, *Am. J. Orthop. Surg.* **16:** 351 (June) 1918.

Steindler, Arthur: Operative Orthopedics, New York, D. Appleton & Co., 1925, p. 89.

McMurray, T. P.: *J. Orthop. Surg.* **1:** 125 (March) 1919.

PERTUSSIS VACCINE

To the Editor:—What is the value of pertussis vaccine as a preventive measure and as a measure for reducing the severity of the attacks? Which vaccines can be counted on as reliable? Please omit name.

M.D., Rhode Island.

ANSWER.—There is considerable difference of opinion among physicians with regard to the value of pertussis vaccine either as a preventive or as a therapeutic measure. Many believe that pertussis vaccine prepared entirely from the Bordet bacillus is a distinct aid as a prophylactic. Some of the vaccines used for the treatment of whooping cough are termed "pertussis combined" and contain, in addition to the Bordet bacillus, staphylococci, streptococci, pneumococci, influenza bacilli and Micrococcus catarrhalis. Though many physicians favor the use of vaccine in the treatment of whooping cough, there seems to be little doubt based on numerous reports and investigations that have been carried on in the past that the average stock vaccine supplied for the treatment of this disease exerts little, if any, influence on the course during the paroxysmal stage.

PHYSIOLOGIC BASIS FOR HYPERACTIVE CHILD

To the Editor:—Can you give me any information regarding the physiologic basis for the overactive or hyperactive child? Please omit name.

M.D., Rhode Island.

ANSWER.—A physiologic basis for the overactive or hyperactive child may be sought in the autonomic nervous system, the endocrine glands or the constitutional makeup of the individual. Existing knowledge of the physiologic regulation of the vegetative nervous system is in a highly speculative state. However, in many of these overactive children an accompanying increased salivary gland secretion, increased intestinal motility and vasomotor instability can lead one to suspect a hyperactivity in the autonomic system. The relation of the endocrine glands to overactivity in children is founded on better known physiologic facts. The influence of the thyroid secretion, as, for example, the hyposecretion in cretinism, with accompanying dulness and sluggishness, and the overactivity of the hyperthyroid, are examples of knowledge in this field. The endocrine influence in the growing child, especially at the time of puberty, is well known. A physiologic increase in systolic blood pressure at this period, often to astonishingly high values, is based on physiologic endocrine influence. The constitutional factor is most important. Overactive children are most often the offspring of highly strung, emotional, unstable parents. A child who inherits an unstable nervous system or a temperamental emotional disposition can hardly be expected to be dull, inactive and phlegmatic in his reaction. Environment also may tend to produce or aggravate overactivity. Calm, placid surroundings constitute the ideal environment for every child. A child with an overactive tendency will show more pronounced and aggravated symptoms in the overactive direction in a disturbed and turbulent home life.

THERAPEUTICS OF CALCIUM

To the Editor:—What are the more common indications for calcium therapy at the present time? Please omit name.

M.D., Rhode Island.

ANSWER.—Calcium carbonate is employed as a vehicle for antacid action.

Calcium is employed as a vehicle for ions with a systemic acidifying tendency; e. g., calcium chloride as a diuretic.

Calcium is used to prevent calcium impoverishment of the system, for example, in pregnancy and lactation and in childhood, unless the calcium is taken in the form of milk (1 quart daily).

In the treatment of acid diarrhea, calcium carbonate not only neutralizes the acids and thus checks the irritation but also raises the amount of calcium available for absorption, which may be of importance in celiac disease of infants and sprue in adults.

In tetany and spasmophilia there is a deficiency in available calcium ions, owing to alkalosis or parathyroid deficiency. Hence calcium administration is of but temporary value in these conditions, unless the alkalosis or parathyroid deficiency is simultaneously corrected.

The results from calcium salts in inflammatory and noninflammatory effusions and edemas is generally disappointing, unless the ionization of calcium is at the same time increased, as it may be by the intravenous injection of calcium chloride. Simultaneous salt restriction seems to be especially important for results in tuberculous effusions.

While calcium cannot, in general, be relied on to increase the coagulability of the blood, it may do so in certain conditions, as in the bleeding tendency of the icteric.

The local use of calcium in the form of lime water or of chalk exerts a very mild astringent effect.

STRICTURE OF THE CERVIX WITH HEMATOMETRA

To the Editor:—A single woman, aged 24, with a normal genital history up to three years ago, when she had gonorrhea, presented herself today with an amenorrhea of two months. She suspected a pregnancy. During her gonorrheal infection she apparently had had some form of thermal cauterization of the endocervix. She was under treatment for about six months and was discharged as cured. Since her gonorrhea, she has menstruated every twenty-eight days up until two months ago, but has had an increasing dysmenorrhea. On examination I found her to be normal in every way except that the external os was completely bridged over by epithelium—not the slightest opening could be found. What, if any, will be the effect on the general health of this individual so long as the occlusion is permitted to remain? Will nature, as a result of the occlusion, abstain from having her ovulate? Please omit name.

M.D., Wisconsin.

ANSWER.—The patient is probably not pregnant but should have an Aschheim-Zondek test to determine this with certainty. The trouble is apparently a stricture of the cervix complicated by hematometra. In the absence of pregnancy, a thorough dilation of the cervical canal is imperative. Otherwise the backpressure of retained menstrual blood will cause hematosalpinx and generalized pelvic inflammation. Ovulation will not cease, but sterility usually occurs in these cases unless the stricture is overcome during the early months.

RELATION OF NASAL OBSTRUCTION TO HEART DEFECT

To the Editor:—A girl, aged 3½ years, has had one attack of rheumatic heart disease, has an autumnal hay fever, and has frequent colds. Her tonsils and adenoids do not appear to be enlarged. However, the septum of her nose deviates markedly to the left at the level of the upper edge of the lowest turbinate bone. The obstruction is so great that even when well she has difficulty in breathing through her nose. She wakens at night frequently because of inability to get her breath, but she never breathes through her mouth. The hay fever aggravates the condition greatly. Will not the difficulty in breathing in time damage her already slightly weakened heart? Under the circumstances, is operation to straighten the septum advisable? What sort of operation should be done? Please omit name.

M.D., Michigan.

ANSWER.—The marked difficulty in breathing is not likely to impair a slightly weakened heart, although it may be distressing from the standpoint of both the patient and the parents. The size of the adenoids should be estimated by finger palpation and judgment drawn not only from the actual size of the adenoid mass but from a comparison between its size and that of the nasopharynx. A small adenoid will markedly block a small nasopharynx, and its removal, by the same token, will much improve the breathing. As to the additional troubles imposed by the deviated septum, a child whose difficulties are as great as those described might, in the opinion of many good men, be submitted to a septum operation. Such occasions are not frequent, of course, but from time to time they do occur. As the deviation in these instances is frequently anterior and cartilaginous in nature, the removal of just the offending piece of cartilage may solve the whole problem, no more tissue being taken out than is absolutely necessary. A skilful operator may avoid removing any cartilage by incising it in such a fashion that it may be swung into proper position and allowed to remain in place. A cautious procedure would consist in first removing the adenoid mass, proceeding to the septum operation only if this fails to give relief.

The frequent colds must be considered a cause of nasal obstruction, as they may be due to sinusitis with secretion or to a perennial hay fever or vasomotor rhinitis, and these possibilities should be disposed of before surgical intervention is attempted.

RETARDATION OF DEVELOPMENT OF GENITALIA

To the Editor —Thirteen months ago a boy was born as the second child to two healthy parents. The child has developed normally to the present time. A matter of concern both to the parents and to myself is the small size of the penis, which protrudes hardly noticeably. Circumcision was performed at 1 week of age, revealing the normal glans penis. There seems to be no evidence of hermaphrodism. My prediction is that this will maintain its proportional size, that it is more a congenital deformity than a glandular deficiency. Can you throw any light on this subject? Please omit name. M.D., Tennessee.

ANSWER.—The condition referred to is often combined with delayed descent of the testicles, which phenomenon should be investigated. Besides individual variations, retardation of development corrects itself frequently with the natural growth of the child. The same holds good in a great many instances with the spontaneous descent of the testicles. Some observers report that in the second year of childhood both these conditions are favorably influenced by the injection of compounds derived from the anterior half of the pituitary body. These compounds may be obtained from any medical supply house.

X-RAYS OR RADIUM IN UTERINE HEMORRHAGE

To the Editor:—In the hands of experts, which has proved the safer measure to use in uterine bleeding of a young woman, x-rays or radium? Please omit name. M.D., New York.

ANSWER.—A few men employ small doses of radium for bleeding, but the x-rays and radium both cripple the ovaries and on this account most gynecologists do not favor their use in women under 40. Keene gives 100 mg. for not longer than five or six hours, with the thought that the ovaries will not be permanently injured by this small dosage, and produces temporary amenorrhea in this way. Those who are less enthusiastic over fractional doses of radium do not, as a rule, favor the x-rays but prefer recourse to operation in case simple palliative measures are of no avail.

Provided ray therapy has been decided on, radium is usually given preference over the x-rays, first because a diagnostic curettage may be performed at the same time, and this is usually essential, and also because radium is more direct and more localized in its action and the dosage can be accurately gaged.

HIGH BASAL METABOLIC RATE

To the Editor:—Please tell me what a metabolism test of plus 17 for a girl, aged 8, means. Please omit name and address. M.D., South Carolina.

ANSWER.—A basal metabolism reading of plus 17 for a girl, aged 8 years, must be interpreted with a great deal of caution. Even when such variables as cooperation and emotion have been ruled out, it must be remembered that this result is not much outside the limits of normal variation. It is well to recalculate such a result on the basis of more than one of the prediction standards available for that sex and age. These standards may yield results in a particular case which differ from each other by more than the reading obtained here. This is partly due to the different criteria on which these standards are based, partly because of the fact that there may occur real differences in temporal and physiologic age and partly because, during that decade, small differences in age may have great influence on the metabolic rate. In cases like this, the basal metabolic rate by any one prediction standard may be useful as a guide to the progress of the case or to the effect of treatment. It should not, however, be allowed to outweigh the clinical diagnosis.

TENDER FEET

To the Editor:—A man, aged 71, suffers a great deal from tender feet. While he was in the railway service about thirty-five years ago both of his feet were frozen, but on reaching the hospital his feet were immersed in ice water and he suffered no sloughing or bad after-effects. Since that time his feet have been exposed to extreme cold but never frozen. He does not complain of pain, unless pressure is applied, but of extreme tenderness. Will you please suggest applications that will toughen the skin on his feet? Please omit name. M.D., Oklahoma.

ANSWER.—The probability is that the trouble is circulatory. Are the feet cold and can a normal pulse be felt in the dorsalis pedia and posterior tibial arteries? Hot foot baths should be followed by the application of an oil. The French advise the use of cod liver oil for this purpose, combined with the administration of small doses of iodides internally. Massage should be done upward with the oil, as the patient can stand it. Tobacco should not be used. Loose fitting shoes and wool socks should be worn. A galvanic foot bath for from ten to fifteen minutes several times a day may be helpful.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 9-13. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Written (Group B Candidates).* The examinations will be held in various cities of the United States and Canada, April 7. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OPHTHALMOLOGY: Cleveland, June 11. Sec., Dr. William H. Wilder, 122 S. Michigan Blvd., Chicago.

AMERICAN BOARD OF OTOLARYNGOLOGY: Cleveland, June 11. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

ARIZONA: Phoenix, Jan. 2-3. Sec., Dr. J. H. Patterson, 320 Security Bldg., Phoenix.

COLORADO: Denver, Jan. 2. Sec., Dr. Wm. Whitridge Williams, 422 State Office Bldg., Denver.

CONNECTICUT: *Basic Science.* New Haven, Feb. 10. *Prerequisite to license examination.* Address, State Board of Healing Arts, 1895 Yale Station, New Haven.

DISTRICT OF COLUMBIA: Washington, Jan. 8-9. Sec., Dr. W. C. Fowler, 203 District Bldg., Washington.

HAWAII: Honolulu, Jan. 8-11. Sec., Dr. James A. Morgan, 48 Young Bldg., Honolulu.

ILLINOIS: Chicago, Jan. 23-25. Supt. of Regis., Dept. of Regis. and Edu., Mr. Eugene R. Schwartz, Springfield.

MINNESOTA: *Basic Science.* Minneapolis, Jan. 2-3. Sec., Dr. J. Charnley McKinley, 126 Millard Hall, University of Minnesota, Minneapolis. *Regular.* Minneapolis, Jan. 16-18. Sec., Dr. E. J. Engberg, 350 St. Peter St., St. Paul.

NATIONAL BOARD OF MEDICAL EXAMINERS: The examinations will be held at centers in the United States where there are five or more candidates, Feb. 14-16, May 7-9, June 25-27, and Sept. 12-14. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEBRASKA: *Basic Science.* Lincoln, Jan. 9-10. Dir., Bureau of Examining Boards, Mrs. Clark Perkins, State House, Lincoln.

NEW YORK: Albany, Buffalo, New York and Syracuse, Jan. 29-Feb. 1. Chief, Professional Examinations Bureau, Mr. Herbert J. Hamilton, Room 315 Education Bldg., Albany.

NORTH DAKOTA: Grand Forks, Jan. 2. Sec., Dr. G. M. Williamson, 4½ S. 3rd St., Grand Forks.

OREGON: Jan. 2-4. Sec., Dr. Joseph F. Wood, 509 Selling Bldg., Portland.

PENNSYLVANIA: Philadelphia, Jan. 2-6. Sec., Mr. W. M. Denison, 400 Education Bldg., Harrisburg.

RHODE ISLAND: Providence, Jan. 4-5. Dir., Dr. Lester A. Round, 319 State Office Bldg., Providence.

SOUTH DAKOTA: Pierre, Jan. 16-17. Dir., Dr. Park B. Jenkins, Pierre.

VERMONT: Burlington, Feb. 7-9. Sec., Dr. W. Scott Nay, Underhill.

WASHINGTON: *Basic Science.* Seattle, Jan. 11-12. *Regular.* Seattle, Jan. 15-16. Dir., Mr. Harry C. Huse, Olympia.

WISCONSIN: Madison, Jan. 9-11. Sec., Dr. Robert E. Flynn, 401 Main St., LaCrosse.

WYOMING: Cheyenne, Feb. 5. Sec., Dr. W. H. Hassed, Capitol Bldg., Cheyenne.

Ohio June Examination

Dr. H. M. Platter, secretary, Ohio State Medical Board, reports the oral, written and practical examination held in Columbus, June 6-9, 1933. The examination covered 10 subjects and included 80 questions. An average of 75 per cent was required to pass. Two hundred and forty-two candidates were examined, 238 of whom passed and 4 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Northwestern University Medical School	(1933)	83.6, 85.9	
Rush Medical College	(1933)		85.3
Indiana University School of Medicine	(1933)		85.2
University of Louisville School of Medicine	(1933)	82.6, 82.7	
Harvard University Medical School	(1931)		84.2, 85.9, (1933) 87
Tufts College Medical School	(1932)		81.8
University of Michigan Medical School	(1932)		81.2
University of Rochester School of Medicine	(1932)		85.3, (1933) 80.7
Ohio State University College of Medicine	(1933)		76.4, 78.4, 79.2, 79.3, 79.4, 79.9, 80, 80.1, 80.2, 80.2, 80.2, 80.4, 80.5, 80.6, 80.6, 80.9, 80.9, 81.1, 81.2, 81.3, 81.3, 81.4, 81.4, 81.5, 81.6, 81.6, 81.8, 82, 82.2, 82.3, 82.3, 82.3, 82.4, 82.4, 82.4, 82.5, 82.6, 82.6, 82.6, 82.6, 82.8, 82.9, 83, 83.1, 83.1, 83.2, 83.2, 83.2, 83.3, 83.3, 83.3, 83.4, 83.4, 83.5, 83.5, 83.5, 83.6, 83.8, 83.8, 84, 84.4, 84.7, 84.8, 84.8, 85, 85.1, 85.1, 85.1, 85.7, 85.8, 85.8, 85.9, 86, 86.1, 86.3, 86.4, 86.7, 86.8, 86.8, 87, 87.3, 87.4, 87.5, 88.7, 89.2
University of Cincinnati College of Medicine	(1933)*		78.6, 78.7, 78.8, 79.4, 79.7, 79.7, 79.9, 80, 80.1, 80.7, 80.8, 80.9, 80.9, 81, 81, 81.1, 81.1, 81.1, 81.2, 81.2, 81.2, 81.3, 81.4, 81.4, 81.6, 81.7, 81.8, 82, 82, 82.1, 82.3, 82.3, 82.3, 82.4, 82.4, 82.4, 82.4, 82.5, 82.7, 82.8, 82.9, 83, 83, 83.2, 83.4, 83.5, 83.6, 83.6, 83.6, 83.8, 83.9, 84.1, 84.2, 84.5, 84.5, 84.6, 84.6, 84.7, 84.8, 84.8, 85, 85.2, 86, 86.3, 86.6, 87.4, 89.1

Western Reserve University School of Medicine	(1932) (1933)	80.2, 75.4, 77.9, 79.4, 80, 80.5, 80.7, 80.9, 81.1, 81.2, 81.8, 82.2, 82.4, 82.5, 82.5, 82.6, 82.7, 82.8, 83.2, 83.2, 83.3, 83.3, 83.4, 83.4, 83.4, 83.7, 83.8, 83.9, 84, 84, 84.1, 84.3, 84.3, 84.4, 84.4, 84.6, 84.7, 84.8, 84.9, 85, 85.3, 85.5, 85.6, 85.7, 85.7, 86.2, 86.2, 86.4, 86.6, 86.8, 86.8, 86.9, 87.1, 87.4, 87.6
Hahnemann Medical College and Hosp. of Philadelphia	(1932)	82.2, 82.7
Jefferson Medical College of Philadelphia	(1931) (1932)	87.8, 84.8, (1933) 81.6, 82.6
University of Pennsylvania School of Medicine	(1931)	80.3
Woman's Medical College of Pennsylvania	(1932)	82.7, 86.3
Marquette University School of Medicine	(1933)	84
University of Toronto Faculty of Medicine	(1930) (1931)	76, 77.2, (1932) 79.3
McGill University Faculty of Medicine	(1933)	77.7
Leopold-Franzens-Universität-Medizinische Fakultät, Austria	(1932)	81.1
Regia Università di Palermo degli studi. Facoltà di Medicina e Chirurgia	(1924)	75
University of Edinburgh Faculty of Medicine	(1931)	75.1

College	FAILED	Year Grad.	Per Cent
Magyar Királyi Erzsébet Tudományegyetem Orvostudományi, Hungary		(1924) 64.9, (1926)†	68.8
Regia Università di Napoli. Facoltà di Medicina e Chirurgia		(1925)	64.6
Universitatea Regele Ferdinand I-iu din Cluj Facultatea de Medicină şi Farmacie, Rumania		(1924)†	71.8

Forty-one physicians were licensed by reciprocity and one by endorsement, July 11. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Colorado School of Medicine		(1931, 2)	Colorado
George Washington University School of Medicine		(1929)	Maryland
Emory University School of Medicine		(1929)	Georgia
Rush Medical College		(1931)	Illinois
Indiana University School of Medicine		(1931), (1932)	Indiana
University of Kansas School of Medicine		(1932)	Kansas
University of Louisville School of Medicine		(1931), (1932, 4)	Kentucky
Tulane University of Louisiana School of Medicine		(1931)	Louisiana
Johns Hopkins University School of Medicine		(1928)	Missouri
Harvard University Medical School		(1917)	New York
University of Michigan Medical School		(1929), (1931), (1932, 2)	Michigan
St. Louis University School of Medicine		(1932, 10)	Missouri
Washington University School of Medicine		(1930)	Missouri
University of Rochester School of Medicine		(1931)	W. Virginia
Jefferson Medical College of Philadelphia		(1922)	W. Virginia, (1928) Pennsylvania
Temple University School of Medicine		(1921)	Penna.
University of Pittsburgh School of Medicine		(1931)	Penna.
Vanderbilt University School of Medicine		(1928), (1931)	Tennessee
Medical College of Virginia		(1926)	Virginia
Medizinische Fakultät der Universität Wien		(1901)†	Maryland
Magyar Királyi Ferencz József Tudományegyetem Orvostudományi, Hungary		(1914)†	Indiana

College	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Harvard University Medical School		(1930)	N. B. M. Ex.

* These applicants have received an M.B. degree and will receive an M.D. degree on completion of internship.
† Verification of graduation in process.

Iowa September Examination

Mr. H. W. Grefe, director, Division of Examinations and Licenses, reports the written examination held by the Iowa State Board of Medical Examiners, Sept. 12-14, 1933. The examination covered 8 subjects and included 100 questions. An average of 75 per cent was required to pass. Nine candidates were examined, 8 of whom passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
University of Arkansas School of Medicine		(1933)*	89
College of Medical Evangelists		(1931)	88.1
University of California Medical School		(1921)	89.4
Northwestern University Medical School		(1933)	86
University of Illinois College of Medicine		(1933)†	88.1
Harvard University Medical School		(1928)	88.8
University of Minnesota Medical School		(1933)	87.3
Regia Università di Firenze degli studi. Facoltà di Medicina e Chirurgia		(1925)	85.1

College	FAILED	Year Grad.	Per Cent
Keokuk Medical College, Iowa		(1904)	67

* License withheld pending completion of internship.
† This applicant has completed his medical course and will receive his M.D. degree and Iowa license on completion of internship.

Arizona October Report

Dr. J. H. Patterson, secretary, Arizona State Board of Medical Examiners, reports the written examination held October 3-4, 1933. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Seven candidates were examined, 5 of whom passed and two failed. Seven physicians were licensed by reciprocity and 3 by endorsement. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Rush Medical College		(1933)	78.1
University of Kansas School of Medicine		(1931)	81
St. Louis University School of Medicine		(1932)	75, 79.5
McGill University Faculty of Medicine		(1933)	76.7

College	FAILED	Per Cent
Osteopaths		69.8, 71.1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery		(1915)	Illinois
University of Louisville Medical Department		(1910)	Kentucky
University of Michigan Medical School		(19-9)	Michigan
Washington University School of Medicine		(1920)	Missouri
John A. Creighton Medical College		(1919)	Kansas
Vanderbilt University School of Medicine		(1929)	Tennessee
Dalhousie University Faculty of Medicine		(1932)	Nova Scotia

College	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
College of Medical Evangelists		(1933)	N. B. M. Ex.
Albany Medical College		(1929)	N. B. M. Ex.
Medical College of Virginia		(1930)	N. B. M. Ex.

Book Notices

Infections of the Hand: A Guide to the Surgical Treatment of Acute and Chronic Suppurative Processes in the Fingers, Hand and Forearm. By Allen B. Kanavel, M.D., Sc.D., Professor of Surgery, Northwestern University Medical School, Chicago. Sixth edition. Cloth. Price, $6. Pp. 552, with 216 illustrations. Philadelphia: Lea & Febiger, 1933.

This book has established itself as a classic. It is the work of the best known authority on the subject and presents a complete study of the anatomy, pathology and treatment of infections of the hand. The author has added much new material and radically revised the old. The new material consists of investigations on special infections such as bites and injuries from the teeth, metacarpophalangeal infections, gangrenous infections, and injuries from indelible pencils and cattle hair. Chapters have been added on the function of the hand and the use of splints, and the prophylactic treatment of injuries. Practically every chapter has been brought down to date. In this edition the subject matter is presented with the discussion of the anatomy and the experimental investigation separated from the clinical study. Kanavel emphasizes the fact that lymphangitis and suppurative tenosynovitis are still too often unrecognized and improperly treated. In lymphangitis, hasty incision not infrequently leads to unnecessary loss of life. In suppurative tenosynovitis the pathologic condition is not recognized, and failure to institute early treatment leads to prolonged illness and permanent disability. The chapter on the use of splints after infections of the hand is highly instructive. The chapter on function of the hand in relation to infections is itself worth the price of the book. The composition, including the printing and the paper, is excellent. The illustrations, including line drawings, anatomic dissection, colored diagrams and reproductions of photographs, each and every one of which illustrates at least one point, are instructive. Many of the author's original hand drawings have been replaced by excellent sketches by Tom Jones, who has drawn several illustrations from the author's film on the diagnosis and treatment of infections of the hand. The book should be on the desk of every physician and surgeon. It is indispensable for traumatic surgeons.

Le métabolisme de l'azote: Dépenses, besoins, couverture. Par Émile F. Terroine, professeur à l'Université de Strasbourg. Les problèmes biologiques, XVIII. Boards. Price, 125 francs. Pp. 562, with 21 illustrations. Paris: Les Presses Universitaires de France, 1933.

This volume presents a detailed survey of the whole field of nitrogen metabolism by a competent authority. Through the excellence of his systematic arrangement, the author has succeeded in presenting his subject in a complete and continuous manner without sacrificing the detailed consideration of the numerous constituent problems that together constitute the whole. The material is divided into short sections and paragraphs, each with subheads that indicate its content of subject matter. The argument is amply illustrated by tabular data, and copious references to the international literature are made.

The book is primarily academic and not clinical in nature. However, the distinct separation of fact and theory, the extensive use of illustrative experimental data, and the systematic arrangement, which facilitates reference, should make it a valuable addition to the library of the well informed physician as well as to that of the biologist.

Housing and the Community—Home Repair and Remodeling. Reports of the Committees on Housing and the Community. Joseph H. Pratt, M.D., Chairman. Reconditioning, Remodeling, and Modernizing. Frederick M. Feiker, Chairman. Edited by John M. Gries and James Ford. Publication No. 8 of the President's Conference on Home Building and Home Ownership. Cloth. Price, $1.15. Pp. 291, with illustrations. Washington, D. C.: President's Conference on Home Building and Home Ownership.

This is a careful study of housing, home repair and remodeling, with special reference to the relation of housing to health, delinquency, industrial efficiency, safety, citizenship, recreation and education. There is an extensive bibliography with many quotations and abstracts referring especially to housing and crime. The committee displays a praiseworthy caution in drawing conclusions as to the causative relationship between bad housing and bad health, delinquency, industrial inefficiency and crime. The book does point out that bad housing is almost universally related to other unfavorable environmental influences and that it is probably one factor in creating or at least favoring the increase in social maladjustment. It points out the importance of wise financing and planning of housing developments. The book is a storehouse of facts and the conclusions are in most instances sufficiently guarded to indicate that, while a strong impression exists that bad housing is bad municipal economy, there is no statistical proof. Perhaps impressions are worth more than statistics in arriving at such a judgment. Particularly valuable is the appendix, which contains a home inspection check list, by means of which a building can be evaluated by the occupant or prospective purchaser as to its desirability for a home with respect to construction, safety, health convenience, equipment, fire hazards and probable future value. This is a reference book which every health and social worker needs to read.

Verhandlungen der Deutschen Gesellschaft für Kreislaufforschung. VI. Tagung, gehalten zu Würzburg am 6. und 7. März 1933. Herausgegeben von Prof. Dr. Bruno Kisch. Paper. Price, 15 marks. Pp. 276, with 132 illustrations. Dresden & Leipzig: Verlag von Theodor Steinkopff, 1933.

There are altogether twenty-eight papers in this volume of transactions. In addition there are numerous discussions, some of which are evidently reported in full. The general subject of the meeting was the circulation and the nervous system. The leading paper ("referat"), taking up particularly the anatomic and physiologic aspects, was by H. E. Hering of Cologne. The leading paper dealing with the clinical features was by F. Kauffmann of Berlin. Among the papers were several dealing with the carotid sinus, a few with the electrocardiogram and with cardiac irregularities. Various phases of blood pressure were also discussed. The president of the society, Professor E. Magnus-Alsleben of Würzburg, delivered the opening address, which was largely historical. The volume is useful for reference and is of especial interest to one wishing to know the latest views of our German colleagues on a subject that the president said had been regarded by some as too difficult to be taken up, a fear, however, which he did not share.

The 1933 Year Book of Radiology. Diagnosis. Edited by Charles A. Waters, M.D., Associate in Roentgenology, Johns Hopkins University. Therapeutics. Edited by Ira I. Kaplan, B.Sc., M.D., Director, Division of Cancer, Department of Hospitals, City of New York. Cloth. Price, $7. Pp. 804, with 780 illustrations. Chicago: Year Book Publishers, Inc., 1933.

In this collective review of the year's progress in radiation diagnosis and therapy, the authors have excelled their effort of last year to present a readable, well arranged, sufficiently illustrated summary of recent progress in their respective fields. It would seem to be an indispensable volume for every radiologist, and it will be of assistance to every physician who desires to keep abreast of radiologic progress. The attention devoted to foreign literature is gratifyingly increased over the space given to foreign abstracts in the previous volume. Methods employed in radiation therapy are constantly being revised, and irradiation is being called on increasingly for the treatment of an ever-growing number of complaints. The field of radiologic physiology, biology and physics still constitutes a challenge to research for the elucidation of many unknown factors. It is apparent that biologic functions play a more important part than the mere physical variations in the rays produced by voltages of different amount, or by the gamma rays of radium. Additional experience tends to show that longer exposures, perhaps amounting in some selected cases to the whole-body irradiation method of Heublein, are preferable to the shorter more intense, more localized, treatments. It is hoped that the authors may receive sufficient encouragement in their work to insure the annual reappearance of this volume.

Diagnostik und Therapie der Lungen- und Kehlkopftuberkulose. Von Dr. H. Ulrici, Ärztl. Direktor des Tuberkulosekrankenhauses der Stadt Berlin in Sommerfeld (Osthavelland). Second edition. Paper. Price, 25 marks. Pp. 389, with 269 illustrations. Berlin: Julius Springer, 1933.

The subject of tuberculosis, like the politics of the day, is undergoing a rapid and striking change and the present edition is practically a new book. After thirty-five pages devoted to pathogenesis and pathology, similar space is allotted to childhood tuberculosis. Physical, radiologic and bacteriologic diagnosis is well discussed. The exudative and productive types of pulmonary tuberculosis as well as hematogenous tuberculosis are described. To treatment, 100 pages is assigned. Specific therapy, chemotherapy and complications have ample sections given them. Laryngeal tuberculosis is discussed satisfactorily in seventeen pages. The section on intestinal tuberculosis is not satisfactory. The psychology of the consumptive is fully discussed. The use of alcohol in treatment is mentioned, and one learns that the author does not advocate its use except for the usual extreme conditions. The Gerson-Sauerbruch-Hermannsdorfer diet is given, and some discussion of gold treatment, to which Ulrici is neutral or mildly opposed. It is interesting to note that he advocates roentgen treatment of forms of productive tuberculosis which are tending to induration. There is no mention of the use of Bacillus Calmette-Guérin. A good discussion of surgical measures occupies the last third of the book. It is to be noted that Ulrici does not favor phrenic exeresis but rather emphraxis. There are new sections on oleothorax and on plombierung. The book is a good summary of modern German work on tuberculosis and is written in a clear style and well printed. The numerous illustrations are admirable, far better than those usually issued by American publishers. The bibliography is practically all German, for only two references are given to foreign literature, one American, one French. In spite of this the author has not overlooked much and to all who read German the book is heartily recommended, for one is impressed by the scientific manner in which the author gives his own experience in sections where his is at variance with that of others.

Histopathology of the Peripheral and Central Nervous Systems. By George B. Hassin, M.D., Professor of Neurology, University of Illinois, College of Medicine. Cloth. Price, $6. Pp. 491, with 229 illustrations. Baltimore: William Wood & Company, 1933.

This textbook is by far the best that has appeared in the recent deluge of works on neuropathology. It is written by a man who has had great clinical experience and possesses an intimate first-hand knowledge of preparations of pathologic material and of the methods by which these preparations were obtained. Although written in a style that sometimes differs from the American idiom, the descriptions of the microscopic slides are so objective that one has the impression that the author wrote them directly from the slides. The illustrations, particularly the photomicrographs, are excellent, and the publishers have done a worth-while job in reproducing them—in fact, the illustrations are much better than one usually finds in a textbook for students. Hassin has several radical theories; for example, that the choroid plexuses, instead of secreting cerebrospinal fluid, absorb it. Although he has paid too little attention to experimental evidence and lays too great stress on doubtful pathologic material, in this book he has refrained from emphasizing his radical point of view and on the whole his summaries of disease entities will be clearly understood by the student. The book has perhaps only one fault, which will probably always be found in a pathology written by a clinician: that not enough space is given to the fundamental disease processes and too much space is given to the diagnostic characteristics of all the different diseases. The first part deals with the diseases of the peripheral nerves, the second part with the diseases of the spinal cord, the third part with the diseases of

the brain, and the fourth part (a welcome addition) with the most useful staining methods that are applicable to nervous material obtainable in the routine pathologic laboratory. Hassin's book deserves an enthusiastic reception.

Die Epidemiologie des Typhus abdominalis unter besonderer Berücksichtigung des Bact. typhi flavum. Von Prof. Dr. med. et phil. E. G. Dresel, Direktor des Hygiene-Institutes Greifswald. Heft 1, Mikrobiologie, Immunbiologie und Grenzgebiete. Wissenschaftliche Zeitfragen. Paper. Price, 3.60 marks. Pp. 40, with 2 illustrations. Leipzig: Johann Ambrosius Barth, 1933.

German bacteriologists in and about Greifswald have been interested recently in a yellow variant of the typhoid bacillus ("Bacterium typhi-flavum"), which they believe to be "a more or less saprophytic form" capable of longer life outside the human body than the ordinary typhoid bacillus. In Dresel's opinion the occurrence of this resistant type explains some allegedly obscure facts in the epidemiology of typhoid. It may be questioned whether the sources of infection of typhoid are in reality as confusing as they are assumed to be in this pamphlet.

Nervous Breakdown: Its Cause and Cure. By W. Béran Wolfe, M.D., Director, the Community Church Mental Hygiene Clinic, N. Y. Cloth. Price, $2.50. Pp. 240. New York: Farrar & Rinehart, Inc., 1933.

Psychiatrists seldom use the term "nervous breakdown." The public uses it constantly. So Dr. Wolfe has written a book on psychoneurotic reactions for the public in words it can understand. He is a sympathetic follower of much of what Dr. Alfred Adler has taught. The author's explanation of the "nervous breakdown" as "a valuable unconscious offensive-defensive device designed to save 'face' before personality disaster occurs" will not fit all cases but is accurate in enough instances to justify amply the text that follows. The seven chapters are on causes, symptoms, cases and cures (three chapters), plain words to patients, and creative self realization. The book is exceedingly well written, contains a fund of excellent advice, is well balanced in its scientific outlook and is distinctly practical. It shows ample evidence of orderly thinking and presents suggestions in a common sense and usable fashion. It can be unreservedly recommended to the layman.

Les arthrodèses dans la coxalgie: Indications, techniques, résultats éloignés. Par Paul Bufnoir. Préface du Professeur Sorrel. Paper. Price, 20 francs. Pp. 109, with 9 illustrations. Paris: Masson & Cie, 1933.

The author describes the indications, contraindications, general principles, complications, technic and end results in cases of tuberculous hip disease treated by arthrodesis. He reports twenty-nine old cases occurring in adults. He describes eight old cases of arthrodesis for tuberculosis of the hip in the process of evolution in infants. The illustrations are well reproduced.

Bone Growth in Health and Disease: The Biological Principles Underlying the Clinical, Radiological, and Histological Diagnosis of Perversions of Growth and Disease in the Skeleton. By H. A. Harris, D.Sc., M.B., B.S., Professor of Clinical Anatomy, University College and University College Hospital, London. Cloth. Price, $10.50. Pp. 248, with 201 illustrations. New York & London: Oxford University Press, 1933.

This book is the outgrowth of articles published in such periodicals as the *British Journal of Radiology*, the *Journal of Anatomy* and the *Lancet*. Those who have read the original articles will be glad to see them in book form. The author, who is an authority on the subject, offers a wealth of material in presentable form. The book is divided into three parts, on lines of arrested growth in the long bones in childhood, bone growth with special reference to deficiency diseases, and significance of the fundamental processes of growth and repair in skeletal disease. First are recorded clinical and experimental researches on the growth of bone. In the first part the researches are based on a study of arrested growth in disease and in experimental animals. The author indicates the application of the results of this study to the elucidation of certain clinical facts in diseases of children and animals, and this forms the main portion of the second part, with special reference to the correlation of roentgenographic appearance and histologic structure. The third part contains recent investigations in which Harris demonstrates the distribution of mitotic zones in cartilage. The distribution of glycogen in relation to phosphatase and the reversion to primitive morphologic character that accompany the age changes in the skeleton are but an index of the work to be pursued in the future. The author states that the romance of bone growth is not yet exhausted. The manifestation of disease in bone, the registration of lines of arrested growth in the long bones, the phenomenal response of certain deficiency diseases to vitamins, the age changes in bone, and the extent to which the child can "grow out of" disease conditions, still present fundamental problems in clinical research and biology. The illustrations, including line drawings, reproductions of photographs and roentgenograms, gross sections and microscopic sections, are instructive and beautifully reproduced. The author's experimental work is given and a good bibliography is appended. This book should be of interest to every pediatrician and orthopedic surgeon.

Medicolegal

Malpractice: Abandonment of Patient After Operation.—The plaintiff sued the defendant-osteopaths for malpractice. He charged: (1) that they had erroneously diagnosed his condition as appendicitis and had performed a useless operation, (2) that they so carelessly and negligently performed the appendectomy as to cause a stoppage or obstruction in his bowels, and (3) that they failed to render him the proper postoperative care. At the close of the plaintiff's evidence, the trial court ruled that the evidence was insufficient to justify the submission of the case to the jury. Subsequently, on appropriate motion by the plaintiff, the trial court revised its ruling and ordered the defendants to stand trial on the charge of negligent postoperative care. From this revised ruling the defendant Laughlin appealed to the Supreme Court of Missouri, division 1. The evidence, said the Supreme Court, must be viewed in the light most favorable to the plaintiff. Briefly, the plaintiff, Aug. 28, 1928, consulted Sites, an osteopath, for relief from a severe pain in his abdomen. Sites diagnosed the ailment as appendicitis and advised an immediate operation, which was performed by Laughlin, another osteopath. After the operation the plaintiff began vomiting and continuously suffered intense pain in his abdomen, which was "swollen as tight as a drum." He remained in the hospital thirteen days, during which time he had no bowel movement and vomited fecal matter "every day or so." He complained to interns and nurses and asked that Laughlin be called but the latter did not appear. Apparently nothing was done during his stay in the hospital to relieve the plaintiff's condition. On September 10 he was discharged from the hospital and returned to his home, where Sites continued to treat him. Five days later, his condition becoming worse, a nonsectarian practitioner was summoned and a diagnosis of intestinal obstruction was made. Finally a passage of the bowels was induced, September 29, the thirty-first day after the operation.

In the absence of an agreement, understanding or notice to the contrary, said the Supreme Court, when a physician is employed to perform an operation, the relation of physician and patient continues until ended by the mutual consent of the parties, or by the physician's withdrawal after reasonable notice, or by the dismissal of the physician by the patient, or by the cessation of the necessity that gave rise to the relation. The physician must not only use reasonable and ordinary care and skill in performing the operation but during the continuance of the relation of physician and patient he must exercise ordinary diligence in the subsequent treatment. He must give, or see that the patient is given, such attention as the necessity of the case demands. Laughlin, continued the Supreme Court, was in charge of the case from the time the plaintiff entered the hospital and during the time he remained there. There was no agreement limiting his service to the mere performance of an operation or any agreement, understanding or notice to the plaintiff that Laughlin would not thereafter either attend and treat the plaintiff or see that such proper care and treatment as the case might require were received. The plaintiff placed himself in Laughlin's hands, submitting to and relying on his knowledge, skill and judgment. After the operation the plaintiff remained under Laughlin's care, relying on his judgment, and the relation of physician and patient continued.

Laughlin contended that the question whether or not requisite degree of care and skill were exercised in treating the plaintiff is to be tested by the general rules and principles of osteopathy, not by the principles of nonsectarian medicine. This argument, said the Supreme Court, has no application to the facts presented here, for the plaintiff's action does not proceed on the theory that some improper method, system or course of treatment was used, but that after the operation Laughlin negligently failed to discover and observe the plaintiff's condition and symptoms and negligently failed to give, or cause to be given, the attention and care which such condition demanded. The intestinal obstruction that developed immediately after the appendectomy continued to grow worse. The distended abdomen, the intense suffering, the absence of any bowel movement, and the vomiting of fecal matter should have indicated a serious intestinal obstruction. It is apparent that this condition was such as to have been readily discoverable by the exercise of that reasonable degree of care, examination and attention which it was incumbent on Laughlin, as the physician in charge of the case, to exercise. The plaintiff's evidence, concluded the court, was sufficient to justify submission of the case to the jury to determine whether or not Laughlin negligently failed to exercise reasonable care toward the plaintiff after the operation and whether the alleged nonattention and failure to observe and discover his condition and administer or give treatment calculated to correct or relieve such condition proximately contributed to aggravate, intensify and prolong the plaintiff's ailment. The action of the trial court in awarding a new trial to the plaintiff was accordingly affirmed.—*Reed v. Laughlin (Mo.), 58 S. W. (2d) 440.*

Malpractice: Gangrene Following Treatment of Fracture.—The plaintiff, a girl 12 years old, fell from a swing and broke both bones of her left arm, just above the wrist. The ends of the bones extended through the skin and became covered with dirt. She was taken to a hospital and there placed under the care of the defendant-physician. Two days thereafter gangrene set in and on August 16 it became necessary to remove the arm at the shoulder. An uneventful recovery followed. In this suit against the defendant for malpractice, the plaintiff claimed that the defendant was negligent in rendering treatment in the first instance, in that he used dry dressings, when he should have used wet; and that, while he dressed the arm on the morning of August 15, he did not again see the patient until he was called by the supervisor of nurses at the hospital, about 6 a. m., August 16, and that no other competent persons examined the patient in the meantime. The trial court gave judgment for the plaintiff, and the defendant appealed to the Supreme Court of Alabama.

It was claimed that on the afternoon of August 15, manifest signs of the infection were in evidence, which would have been discovered by the defendant had he examined her that afternoon or night. The defendant contended that he did examine the patient several times, and the hospital chart showed that he made an examination on the afternoon of August 15. There was, however, substantial evidence to the contrary. The expert witnesses were in accord, said the Supreme Court of Alabama, that the circumstances of the accident, known to the defendant, suggested the probabilities of gangrene, known to be very dangerous. Such knowledge, all admitted by the defendant, demanded frequent examination and radical treatment. There was substantial evidence that on the afternoon of August 15 the wound emitted a strong and offensive odor and that the patient had fever and was restless. Early the following morning the infection had extended past the elbow. That circumstance and the evidence of the symptoms on the preceding afternoon and night justify an inference that the infection on that afternoon could and would have been detected by a competent person, said the court, and prompt and efficient treatment would have probably stopped its progress and prevented the necessity of amputation. When a physician undertakes to treat a patient whose condition, known to the physician, is such that without continuous or frequent expert attention injurious consequences may result, he must either render such attention himself or see that some other competent person does so. The question of the defendant's negligence was a fair issue for the jury. The trial court, however, refused to charge the jury that if they believed the evidence they could not find for the plaintiff because the defendant used dry bandage in dressing the plaintiff's injury. This was error, said the Supreme Court. The gravamen of the complaint is negligence, not want of skill. Where there are various recognized methods of treatment, the physician is at liberty to follow the one he thinks best and is not liable for malpractice because expert witnesses give their opinion that some other method would have been preferable. The experts in this case all agreed that wet and dry dressings in such cases are both used by skilful physicians and that standard authorities approve them both. It is largely in the sound discretion of the surgeon in charge of the case. The defendant was shown to have been a competent surgeon and used the method adopted by him with care and skill, and the wound continued to drain to the last and did not seal up. This is the result the best process was expected to secure. For using dry bandage, the defendant is not chargeable with want of due care, or negligence, and the refusal of the trial court to charge the jury as requested constituted a prejudicial error to the defendant. The judgment of the trial court, therefore, was reversed and the case remanded.—*Jackson v. Burton (Ala.), 147 So. 414.*

Society Proceedings

COMING MEETINGS

American Academy of Orthopedic Surgeons, Chicago, Jan. 8-10. Dr. Philip Lewin, 104 South Michigan Blvd., Chicago, Secretary.

Annual Congress on Medical Education and Licensure, Chicago, February 12-13. Dr. W. D. Cutter, 535 North Dearborn Street, Chicago, Secretary.

CENTRAL SOCIETY FOR CLINICAL RESEARCH

Sixth Annual Meeting, held in Chicago, Oct. 27 and 28, 1933

(Concluded from page 2078)

Studies on Surgery of the Inferior Vena Cava

DRS. WALTMAN WALTERS and JAMES T. PRIESTLEY, Rochester, Minn.: Experimental and clinical studies were made following incision and suture of the inferior vena cava. In the experimental studies on dogs, a portion of the vena cava was removed and the vessel repaired with specially prepared silk sutures. Subsequently, at varying intervals, necropsy was performed on the dogs to ascertain the status of the healing processes in the vena cava and to discover any possible evidence of thrombosis or embolism. Serial microscopic preparations made from the vena cava at the operative site evidenced the reparative reaction in the wall of the vein, starting with early fibroblastic proliferation in the adventitia and ending with complete endothelization of the intimal layer. In four clinical cases the inferior vena cava was opened for the removal of papillary projections of a right renal neoplasm, or during mobilization of a densely adherent kidney. In each case hemostasis was satisfactorily obtained, by suture in some cases and by the application of hemostats in others, without the necessity of ligating the vena cava.

DISCUSSION

DR. MORRIS H. NATHANSON, Minneapolis: I should like to ask concerning the possibility of operating on the inferior vena cava within the pericardium. Several years ago I reported some cases of therapeutic pneumocardium before this society. In one case the air did not appear on the right side of the heart, which indicated that there were some adhesions in this region. The patient later developed a cardiac decompensation with only slight dyspnea but marked liver enlargement and ascites. I considered that this might be due to adhesions about the inferior vena cava and this was found at autopsy. Were the possibilities good for surgical intervention in this case?

DR. ARGO J. BEEM, Cleveland: I should like to ask the authors whether they have had evidence of thrombosis.

DR. J. T. PRIESTLEY, Rochester, Minn.: I have had no experience with clinical surgery of the vena cava for adhesions

about the pericardium. In animals the vessel can be approached quite satisfactorily and can be manipulated with a certain amount of success and satisfaction, in this region. Very few satisfactory results following pulmonary embolectomy have been reported. If conditions are favorable, the vena cava might possibly be operated on at that point. I endeavored to discuss the evidence of healing in the vena cava and to discover any possible evidence of thrombosis or embolism. No pulmonary emboli were discovered in any animal; however, in several instances there was a small adherent thrombus at the operative site.

Focal Infection and Erythema Nodosum

DR. ISADORE PILOT, Chicago: Erythema nodosum was observed as a sequela of streptococcic sore throat in which filtrates of the hemolytic streptococci produced typical nodules on intradermal injection. Tuberculin tests in two patients gave no reaction. In another rare type of case, erythema nodosum complicated lymphogranuloma inguinale. The Frei test was positive, and the lesion from the intradermal test was markedly nodular. A third common type gave a nodular reaction to tuberculin. In the two latter instances, streptococcus filtrate caused no reaction. It would appear that erythema nodosum is not a clinical entity but a peculiar hypersensitive response of the skin to toxic products from foci of infection due to streptococci, tubercle bacilli, the virus of lymphogranuloma inguinale and perhaps other agents.

DISCUSSION

DR. H. M. CONNER, Rochester, Minn.: I should like to ask Dr. Pilot whether he considers these reactions sufficiently definite, so that, given a case of erythema nodosum, one could, by use of a series of antigens, decide on the etiologic agent.

DR. ISADORE PILOT, Chicago: These reactions were not of the immediate allergic type that one sees with proteins. They come on in twenty-four hours and instead of fading, as in connection with the tuberculin test, they go through an involution as an erythema nodosum nodule and persist up to ten days. I have tried other streptococcus antigens, for instance, the scarlet fever streptococcus. This will give an inflammatory reaction, but the nodule is not as violent or as marked in its extent as the nodule from the autogenous strain. As far as treatment is concerned, there is nothing to do in these cases. When the streptococci disappear from the throat, the focus apparently is of only transitory nature and the erythema nodosum disappears. In one instance, although the erythema nodosum cleared up the arthritic pains persisted. About four months later the tonsils were removed and the same streptococci isolated. The arthritic pain that had been present disappeared, so the tonsils could be considered the focus. In using tuberculin, one should employ 1:10,000 instead of 1:1,000. With reference to streptococcus antigens, one can obtain some definite reaction with stock antigens of hemolytic or even nonhemolytic type, but it is preferable to make the antigen from the patient's own throat if there is a definite history or definite evidence of a focus.

Measurements of Muscular Work in Occlusive Arterial Disease of the Lower Extremities

DRS. DWIGHT L. WILBUR and GEORGE E. BROWN, Rochester, Minn.: An attempt has been made to develop an apparatus with which the movement of walking is simulated in order that measurements of muscular work may be made on the basis of horse power units. In this way the extent of incapacity of patients with occlusive arterial disease and intermittent claudication, and the effects of therapy on them, can be determined. The apparatus consists of a sewing machine modified so that the patient's leg must push against a weight, which may be adjusted; by noting the duration of the experiment, the horse power that is developed can be measured. By this method the muscular capacity of the legs of twenty-nine normal persons who served as controls and those of thirty patients with various types of peripheral arterial diseases has been measured. The method is of value and with modifications, which come with experience, should be an adjunct in the study and treatment of patients with localized forms of arterial diseases. Errors inherent in this type of study are those of personal threshold of pain and fatigue, the factor of muscle conditioning, and unknown influences of the general state of the patient. Fairly close approximations of the amounts of muscular work can be obtained on repeated tests under variable conditions in normal and diseased subjects. The following results have been obtained: 1. As a group, those with occlusive arterial disease (thrombo-angiitis and arteriosclerosis obliterans) of the lower extremities are unable to perform as much work with their legs as do normal persons, and the degree of disability is quite similar in the two types of arterial disease. It follows, therefore, that the disability is dependent on occlusion rather than on the type of disease underlying the occlusive process. 2. In the normal and diseased subjects as groups the time of onset of the sensation of fatigue in the calf muscles was very much the same, but the duration of the exercise was sharply different. 3. No correlation could be established between the amount of muscular work performed and the severity of arterial occlusion of an extremity as demonstrated by the presence of pulsations of the arteries of the extremity and the grade of vasospasm as measured by dilatation with fever. 4. In those cases in which intermittent claudication was reproduced, the duration of the exercise, the total amount of work performed, the time of onset of fatigue, and the pulsation of the arteries were significantly less when compared with the group in which occlusive arterial disease was present but in which intermittent claudication was not a distinct symptom.

DISCUSSION

DR. L. N. KATZ, Chicago: In a series of studies carried out in the laboratory, my associates and I have been able to show that there are a number of factors contributing to the production of pain in intermittent claudication, the most important factors being the amount of muscular work, circulatory stasis, and the available oxygen to the tissues. I should like to ask the authors whether the patients had a preliminary period of rest before performing the exercise. We have found quite consistently, and contrary to the previous observations of Lewis, that a period of ischemia preceding the exercise will materially shorten the amount of exercise necessary to produce pain. I should also like to ask whether an attempt was made to evaluate the rôle of circulatory disturbances in venous flow, particularly those due to varicosities. We have found that venous stasis alone, without arterial occlusion, may lead to the development of pain on exercising the limb. Finally, I should like to ask whether an attempt was made to check the rate at which the exercise was performed by the patients. It has been clearly established that a given quantity of work may require a different amount of muscular effort, depending on the rate at which the movements are performed.

DR. DWIGHT L. WILBUR, Rochester, Minn.: Most of our patients were rested for a period of from ten to fifteen minutes preceding the test. It did not seem probable that moderate exercise just preceding the test had any great influence on the results of the exercise. Venous stasis was not present to a recognizable degree in the majority of our patients. Varicosities were uncommon. We considered the rate at which the machine was run and found it to be significant in regard to the horsepower developed but not as regards the total amount of work done. As a group, the arteriosclerotic individuals ran the machine considerable faster than did normal individuals and patients with thrombo-angiitis obliterans.

Relationship Between Acid-Base Equilibrium and Bacterial Flora of the Stomach

LLOYD ARNOLD and MARION HOOD, Chicago: There are certain differences between the behavior of bacteria in contact with living cells and their behavior in test tubes. A study of in vivo bacteriology has opened up new fields. Several body surfaces have been studied, such as the skin, the oral and nasal cavities, the conjunctiva, the stomach, the small intestine and the vagina. Some observations dealing with the stomach are to be reported here. Arnold and Johnson found that the free acid gastric contents of dogs did not kill bacteria but exercised only a bacteriostatic influence on the flora. Continuous observations showed bacteria to be nonviable in the gastric lumen in the presence of free acid, but a heavy viable flora appeared at the time the free acid disappeared or was neutralized.

Arnold recorded certain bactericidal or self-disinfecting powers of the small intestine. There is a correlation between the bacterial flora of the stomach and the small intestine. Gastric studies were extended to human subjects. Cultures of fractional aspirations of fasting gastric contents were taken on plain agar plates and the hydrogen ion concentration was determined colorimetrically. The acid-base equilibrium was adjusted toward the acid as well as the alkaline ranges and the changes in endogenous bacterial flora were determined by agar cultures as well as direct smears. Hydrochloric, acetic and lactic acid solutions and lemon and orange juice were used as acidifying agents. There are definite correlations between the acid-base balance and viable bacteria in the gastric lumen. The experimental work reported on laboratory animals has been substantiated. Dr. Gulbrandsen from this laboratory has found a correlation between the acid-base balance of the duodenum and the bacterial flora of this region. Acid-reacting duodenal contents are usually sterile on culture; alkaline-reacting duodenal contents give heavy growths of bacteria by cultural methods. The development of knowledge of the bacterial flora residing within the lumen of the stomach and upper levels of the small intestine may indicate a new approach to certain metabolic disturbances associated with decreased gastric acid secretions. The possible influences of this intragastric bacteriostatic mechanism on the degenerative diseases of the older age groups has been outlined by Arnold.

Effect of Sphlanchnic Nerve Section on Carbohydrate Metabolism

DRS. G. K. FENN and GÉZA DE TAKÁTS, Chicago: An attempt has been made to stabilize the carbohydrate tolerance and to reduce materially the insulin requirement in the juvenile diabetic patient. This end has been sought by means of section of the sphanchnic nerves. One case (already reported) in which a rather striking result was achieved was in contrast to a second case, in which the result was much less striking. A method of case selection has been devised which may result in the separation of diabetic patients into different groups. The use of insulin sensitivity curves in normal persons and diabetic patients and the blood sugar responses to the ingestion of galactose before and after the administration of ergotamine constitutes a method of case separation that appears to be of value in the selection of cases for this type of treatment.

DISCUSSION

DR. RUSSELL M. WILDER, Rochester, Minn.: I regard these studies as of great importance. They bear on the heretofore ambiguous subject of sensitivity to insulin. But I am inclined to dispute the conclusion that different varieties of diabetes are indicated by these different reactivities to injections of insulin. I suspect rather that the test is a test of different kinds of people with the same disease and that the response obtained depends on the irritability of the nervous system.

DR. R. W. SCOTT, Cleveland: I should like to ask whether the authors made any observation on how these individuals tolerate the effect of gravity on the circulation.

DR. M. H. NATHANSON, Minneapolis: I am interested in the result obtained with ergotamine. The specific action of ergotamine is paralysis of the sympathetic nerve endings. In some studies which I am carrying out I attempted to modify the effect of epinephrine on the cardiac mechanism with ergotamine. I found, however, that I could not give doses sufficiently large in human beings to paralyze the effect of epinephrine on the heart. When one inspects the pharmacologic literature, one finds that the doses of ergotamine used to antagonize the pressor effect of epinephrine in the experimental animal are much larger than those which are used in man. It is interesting, therefore, to see that there is some modification of sensitiveness to insulin in man with moderate doses of ergotamine.

DR. E. L. SEVRINGHAUS, Madison, Wis.: It is rather noticeable that among juvenile diabetic patients there are occasionally young men and young women that are difficult to manage over a long period because of sudden shifts in glycemia. Erratic hyperglycemia properly leads these patients to increased doses of insulin. Hypoglycemic reactions of severe types frequently follow. These patients seem to be emotionally unstable also. I wonder whether the authors have any data as to whether these patients that are more easily stabilized after splanchnic section are among those who are emotionally unstable; also whether they have any observations on change in the sympathetic mechanism after splanchnic section and whether it has any effect other than on the carbohydrate metabolism, such as on the responses to emotional stimuli.

DR. GÉZA DE TAKÁTS, Chicago: It is obviously more difficult to suppress the pressor effect of epinephrine with ergot than the hyperglycemic effect. It is also true, of course, that much smaller quantities of epinephrine are necessary to produce hyperglycemia than to produce the rise in the blood pressure. The flattening of the hyperglycemia curve after the administration of ergotamine may be an inhibition of the sympathicosuprarenal mechanism, but it also may be due to an increased utilization of sugar in the periphery. Our present data do not supply any information on this question. In reply to Dr. Sevringhaus I may state that the splanchnic section did stabilize tolerance in the first case, in which two respiratory infections were not followed by decrease in tolerance. In the second case we had no such experience. In regard to Dr. Scott's question, the effect of gravity on blood pressure following splanchnic section was quite marked for about four weeks after both operations. The systolic pressure dropped from 100 to 85 and as low as 75 mm. of mercury after three or four minutes of erect posture. However, after from four to six weeks neither of the two patients showed this postural hypotonia. Regarding Dr. Wilder's question, it may be not that the types of diabetes are different but that the same type showed different manifestations in different types of constitutions. Nevertheless, an increased sympathetic irritability of the glycosecretory mechanism may be beneficially affected by the suppression of such nervous impulses. The operation, as we see it now, seems worthy of trial in juvenile diabetic patients who are insulin resistant and respond well to ergot.

Special Features of the Epidemic of Encephalitis in the St. Louis Area

DRS. G. O. BROUN, R. O. MUETHER, MAURICE W. SBERTOLI and A. F. DEL VALLE, St. Louis: The average case was characterized by sudden onset with headache, muscular aches and sometimes chills, and by high irregular fever usually of seven to fourteen days' duration terminating by lysis. Meningeal symptoms, such as headache, drowsiness, stupor, mental confusion and delirium, predominated. Cranial nerve palsies were relatively rare. Neck rigidity, muscular tremors and spasticity, positive toe signs, absent or unequal tendon, abdominal and cremasteric reflexes were the most common physical observations. Some evidences of myocardial weakness were often noted in severe cases. Respiratory symptoms other than terminal pneumonia rarely occurred. Nausea and vomiting were frequent. The urine occasionally contained albumin, pus, erythrocytes and casts. Some elevation of blood nonprotein nitrogen was not infrequent. Blood sugar tended to be slightly increased, but glycosuria was very rare. Moderate polymorphonuclear leukocytosis was present in the majority of cases. The spinal fluid was clear, with usually some increase in pressure, a positive globulin, a normal sugar content, and an increased count of lymphocytic cells. The colloidal gold showed a tabetic curve. Convalescence was usually rapid, with few immediate serious nervous sequelae. The mortality was low in patients under 40 years of age. It was especially high in cases showing preexisting morbid conditions, particularly hypertensive vascular disease.

Pathologic Changes in Patients Dying of Encephalitis

DRS. R. S. MUCKENFUSS and H. A. MCCORDOCK, St. Louis: The most interesting pathologic lesions characteristic of the various types of encephalitis and the lesions found post mortem in patients dying in the present epidemic were found in the kidneys, which were swollen and intensely congested, the pelvis being studded with small hemorrhages. Intramuscular inclusion bodies were found in the cells of the tubules by Dr. Margaret Smith in about 50 per cent of the cases so far studied.

DISCUSSION ON ENCEPHALITIS

DR. M. A. BLANKENHORN, Cleveland: I should like to ask whether the pulmonary changes and kidney lesions can be considered in any way complications or are they secondary infections?

DR. H. M. CONNER, Rochester, Minn.: Has there been any attempt at the production of the disease in animals and if so, with what success? Also, I should like to ask whether or not the inclusion bodies in the kidneys have any significance.

DR. C. F. KEMPF, Indianapolis: I had an opportunity of seeing cases in Indianapolis during the epidemic of encephalitis that appeared in 1929, 1930 and 1931. Clinically this group of cases, of which there were something like 260, is very similar to the clinical picture described by Dr. Broun and his associates. I doubt whether from the clinical observations one could tell the difference. There were a few mild cases, but the greater proportion terminated fatally in a very short time. There were more signs of meningeal irritation, and a greater number of these cases showed delirium. In the spinal fluid more cases presented a low cell count than an increased count. The colloidal gold changes were rather similar. However, intraspinal drainage was continued in many of these cases for several weeks. The greatest difference in the two epidemics was in the pathology. The cases seen in Indianapolis either showed nothing more than a dilatation of the blood vessels, with some damage to the cortical cells, or some very definite meningeal changes without any perivascular areas or very few areas of focal necrosis. The virus was not demonstrated. Certainly the conditions clinically are very similar.

DR. G. O. BROUN, St. Louis: The clinical picture presented was not sufficiently specific in itself to permit of absolute diagnosis. In the group that we studied there were a number of cases originally diagnosed as encephalitis that did not show it. I will mention one case specifically. The history and physical observations, if compared with those in many cases of encephalitis, were practically identical. There were headache, fever, nausea, vomiting, somnolence, slight rigidity of the neck, inequality of the reflexes, and one or two positive toe signs. The spinal fluid was clear, with a cell count of 52, and normal spinal fluid sugar. It proved to be a case of typhoid. Another patient came in with headache, neck rigidity, and a spinal fluid cell count of 30. Very quickly after admission the patient was found to be suffering from malaria and on the administration of quinine the symptoms cleared up. I think it must be remembered that there is probably some increase in the spinal fluid cell count in many acute febrile diseases as well as in encephalitis. This means that every case must have a bacteriologic study before the diagnosis can be established with certainty. Regarding the colloidal gold curve, we usually made two spinal fluid examinations, one at the time of admission and one at the time of discharge. Ninety per cent of the colloidal gold tests showed a tabetic curve on admission and most of them showed the same on discharge. If there is any change, it usually is a flattening out of the curve. We had one or two with a paretic curve and a few more with a normal curve. The cell count was still somewhat high in convalescents, many cases showing counts of from 10 to 30.

DR. R. S. MUCKENFUSS, St. Louis: I am not able to say definitely whether the changes in the lungs and in the kidneys were actually part of the disease picture or were complications. They undoubtedly occurred in quite a high percentage of the cases. It is probable that they were in some way associated with the disease, but we have no direct proof of this. As to the inoculation of animals, numerous attempts were made from the onset of the epidemic to determine the etiologic agent. Routine blood cultures and spinal fluid cultures were made. Because of the difficulty in some cases in distinguishing it clinically from typhoid, many stool cultures were made. With a few exceptions these were negative. When positive cultures were obtained, the variety and paucity of organisms were such that we felt that we were dealing with contaminants. Of the animals inoculated, manifestations similar to disease seen in man were observed in our laboratory in monkeys. These monkeys showed an elevation of temperature associated with some incoordination and tremors. The disease was passed from monkey to monkey with some difficulty. During this time we were sending autopsy material to a number of different laboratories. The material sent to Dr. Webster at the Rockefeller Institute was used in a strain of mice highly susceptible to neurotropic viruses. He was able to produce a disease that could be maintained in these animals. Accordingly, mice were inoculated from second passage monkeys, and a disease similar to that seen by Dr. Webster was established in stock mice. The identity of this virus has not been settled, but studies are in progress. We are exchanging strains of virus with Dr. Webster and these will be compared in both laboratories.

The Electrocardiogram in Myocardial Infarctions: A Review of 107 Clinical Cases and 108 Cases Proved at Necropsy

DR. A. R. BARNES, Rochester, Minn.: This study had three primary objects in view: 1. To furnish an answer to the question of whether or not other cardiac lesions produce electrocardiographic changes which duplicate the characteristic electrocardiographic picture of acute coronary occlusion. 2. To reexamine the value of the RS-T changes in the electrocardiogram following acute myocardial infarction as a means of predicting the situation of infarction before death. 3. To determine, in those cases in which electrocardiographic evidence of acute myocardial infarction is lacking, the reasons for this failure. Study of cases encountered at the Mayo Clinic leads to the following conclusions: 1. No other cardiac lesion reproduces in its entirety the typical RS-T modifications of the electrocardiogram described as characteristic of acute myocardial infarction. 2. In no instance in which a typical T_1 or T_3 type of electrocardiographic change has developed have we failed to find myocardial infarction in the region anticipated. Failure to do so has meant either that the tracing was not typical or that sufficient study of the pathologic change in the predicted region of infarction has not been carried out. 3. A considerable number of infarctions are not signalized by the development of typical changes in the RS-T segment of the electrocardiogram. In our cases this failure was accounted for by one of the following causes: (*a*) Electrocardiograms were not obtained in sufficient number or in proper time relation to acute myocardial infarction. (*b*) There were multiple areas of acute myocardial infarction. (*c*) The presence of bundle-branch block obscured the electrocardiographic pattern of infarction. (*d*) Pericarditis or pericardial effusion modified the electrocardiographic changes. (*e*) The amplitude of the deflections in lead I or lead II was so small that the RS-T changes characteristic of infarction could not be recognized. (*f*) The tracing was obtained when a patient was dying.

The combined consideration of the RS-T and Q patterns yield more information regarding the presence of myocardial infarction than does the consideration of either pattern alone. Frequently the two patterns are equally indicative of infarction. Fairly commonly the RS-T segment changes are more typical of myocardial infarction than are the Q patterns. In a smaller number of patients the Q patterns are more typical of infarction than are the RS-T changes. There is a considerable group of patients in whom the RS-T changes indicate myocardial infarction when the Q patterns are entirely lacking. There is an occasional case in which the Q pattern is indicative of infarction when RS-T changes are absent.

In our cases the Q_1 type of electrocardiogram is found in association with infarction involving the apex and anterior portion of the left ventricle. The Q_3 type of electrocardiographic change is associated with infarction of the basal portion of the left ventricle.

The development of a highly characteristic T_1 or T_3 type of electrocardiographic change following acute coronary occlusion seems to indicate a better prognosis than does an atypical tracing. Typical T_1 or T_3 electrocardiograms were encountered six times as commonly as atypical electrocardiograms in the patients who recovered. In patients who died, atypical tracings predominated over typical tracings in a ratio of four to three. The atypical tracings usually were found to be associated with multiple infarctions, extensive single infarctions, or complicating pericarditis, any one of which obviously increases the gravity of the outlook.

In cases the reports of which have been published, as well as in our series, T_1 and T_3 types occur with about equal frequency.

This means that the posterior basal portion of the left ventricle is infarcted approximately as often as the anterior apical portion.

Effect of Theophylline Ethylenediamine on Cardiac Infarction Produced by Ligation of the Coronary Arteries in the Dog

DRS. W. M. FOWLER, H. M. HUERVITZ and FRED M. SMITH, Iowa City: In perfusion experiments on the isolated rabbit heart, theophylline ethylenediamine produced a far greater and more consistent increase in the rate of coronary flow than any other of the drugs that were studied. The action of theophylline ethylenediamine on the coronary circulation was further investigated through its effect on the size of the infarct produced by the ligation of a coronary artery in the dog. In the dogs receiving theophylline ethylenediamine there was a decided reduction in the size of the infarct as compared to that of the control series. Moreover, the infarct was more sharply demarcated and did not present the usual frayed-out appearance encountered in the untreated animals. These results indicate that this drug promotes the development of collateral circulation and thereby reduces the extent of the myocardial damage resulting from the ligation of a coronary vessel.

Cardiac Infarction: Its Subjective Symptoms in Relation to Its Pathologic Anatomy

DR. NATHAN S. DAVIS III, Chicago: There have been suggestions that the presence or absence of pain in cardiac infarction is related to the underlying pathologic anatomy. In an attempt to confirm or refute this theory, some seventy-five records from the Department of Pathology of Northwestern University Medical School have been studied. It appears that the pain of cardiac infarction, like that of angina of effort is due to relative ischemia of the myocardium more than to anything else; that complete ischemia of a limited area of the myocardium does not cause pain.

DISCUSSION ON HEART DISEASE

DR. L. N. KATZ, Chicago: In regard to Dr. Barnes's paper, a careful survey of the reported autopsy cases by Gilchrist and Ritchie failed to show any clear-cut correlation between the configuration of the electrocardiogram and the location of the infarct. This conclusion Wilson and his co-workers also arrived at from a survery of their autopsy cases. At Michael Reese Hospital, Drs. Hamburger, Priest, Saphir and I have examined thirty-four consecutive autopsy cases, in twenty-one of which electrocardiographic records were taken. We could not consistently locate the position of the infarcts in this series from the appearance of the electrocardiograms. Korey and I have recently injected alcohol into various regions of the dog's heart and found that the electrocardiographic changes produced are not related to the location of the injured area. Furthermore, it must be borne in mind that, as Dr. Bohning and I have recently shown, it is not always easy to fit the electrocardiogram into the T_1 or T_3 types. In regard to Dr. Davis's paper, in the study mentioned we could not correlate between angina pectoris and the nature of the infarct.

DR. WARREN B. COOKSEY, Detroit: For several years I have been interested in a group of cases in which small infarcts were suspected but in which the infarcts could not be proved clinically. During a study of serial electrocardiograms following coronary thrombosis, I was impressed by the occasional striking changes that occurred in both T_1 and T_3. In certain cases the T_1 became very sharp, of greater than normal amplitude and positively directed, whereas T_3 became deeply cove negative. Because of the striking character of these changes, I have been interested in the frequency with which they also occur in patients of coronary sclerotic age with suggestive symptoms but who have never had a gross infarction. I have followed sixty cases with but one autopsy to date. This patient was being operated on under gas when, because of deep cyanosis, he developed ventricular fibrillation and died. He had numerous small healed infarcts along the course of the left descending coronary. I should like very much to hear whether Dr. Barnes or Dr. Scott or Dr. Katz has encountered these changes.

DR. ROY W. SCOTT, Cleveland: These three papers present many aspects for discussion to those interested in heart disease. The paper of Dr. Fowler and his associates on the effect of theophylline ethylenediamine on the dog's coronary arteries raises the question as to how closely these results apply to man. It has been known for a long time that caffeine and its derivatives increase the coronary flow in the animal heart, but few carefully controlled observations have been made on man. The best of these, so far as I know, are the studies recently reported by Wayne and Laplace, who found that theophylline ethylenediamine, either by mouth or intravenously, increases the amount of exercise tolerated by patients with angina of effort. The clinical reputation of theophylline ethylenediamine as a coronary dilator is based largely on statements that its use over long periods diminishes the frequency and severity of the attacks. Such evidence is admittedly difficult to evaluate. Dr. Fowler and his associates mentioned that their animals receiving theophylline ethylenediamine for twenty-one days following coronary ligation showed smaller areas of infarction than did animals that did not receive the drug, and they ascribe their results solely to the effects of the drug. This conclusion would seem warranted were there not a considerable variation in the coronary circuit in normal dogs. Dr. Davis's paper illustrates the difficulties in correlating a clinical syndrome with anatomic observations. Proved cases of acute coronary thrombosis occur without pain. Recently I saw a patient with excruciating pain in the left elbow but not in the chest. One is reminded of a small group of individuals dying of myocardial insufficiency from coronary disease in whom chest pain may never be a conspicuous feature. I refer to those cases in which the coronary arteries appear to be slowly occluded, resulting in an extensive fibrosis of the ventricles.

DR. M. H. NATHANSON, Minneapolis: I have had an opportunity to observe under somewhat controlled conditions the possible effects of theobromine and theophylline compounds in clinical cases. These compounds are expensive and at our hospital it was found that the cost approximated $400 a month, owing to the freedom with which the interns and residents prescribed these substances. Several months ago it was decided that these compounds could be prescribed by only two members of the staff. In the outpatient department it was found that while many patients did as well when sodium nitrite was substituted, certain other patients returned and stated that there was a definite increase in the frequency of their anginal attacks when the theobromine compounds were discontinued.

DR. A. R. BARNES, Rochester, Minn.: I regret that time does not permit me to answer each of Dr. Katz's criticisms in detail. Detailed analysis of the cases reported by Gilchrist and Ritchie shows that such inconsistencies as they have called attention to can be explained on the basis of the facts that I listed in discussing the cases of acute myocardial infarction in which electrocardiographic evidence of that event was lacking. For the most part, Wilson and his co-workers corroborated our localization hypothesis. In the last issue of the British journal *Heart*, Dr. Wilson thought he had found a definite exception to this localization in a patient with a T_3 type of electrocardiogram. Subsequent careful pathologic study proved this not to be the case. Dr. Katz maintains that infarction in the anterior and in the posterior portion of the left ventricle of the dog gives an identical tracing. A review of the experimental work on the dog's heart does not support that contention. I should like to point out that it is important for all physicians to consider both the Q and T patterns in an attempt to diagnose acute myocardial infarction. There is no doubt in my mind that typical T_1 and T_3 patterns will localize myocardial infarction accurately, but the confirmation of that must be left to the future. I am confident that, in time, an agreement will be reached.

DR. NATHAN S. DAVIS III, Chicago: In replying to Dr. Katz's question, I would say that in some of these cases there was hemorrhagic infarction and no pain. In the series there were several cases in which no narrowing of more than one branch of the coronary artery is reported. There may be some sclerosis in other branches, but no narrowing was reported in the record. I might also state that in classifying these cases I considered those with pain and those without pain. Some patients had pain only in the arm and shoulder, others only epigastric pain. A history of that sort of pain was considered positive in making this classification.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

46: 473-704 (Sept.) 1933

Physiology of Cerebral Activity in Children as a New Subject of Pediatric Investigation. N. I. Krasnogorski, Leningrad, U. S. S. R.—p. 473.

Acid-Base Balance of New-Born Infants: IV. Effect of Ingestion of Alkali on Acid-Base Balance of New-Born Infants. V. W. Lippard and Eleanor Marples, New York.—p. 495.

*Encephalitis as a Complication of Measles: Report of Thirteen Cases. M. G. Peterman and M. J. Fox, Milwaukee.—p. 512.

*Acute Pyothorax: Treatment of Children and Infants by Aspiration of Pus and Air Replacement; Preliminary Report. H. Bloch and P. L. Parrish, Brooklyn.—p. 518.

*Guanidine Intoxication: Complicating Factor in Certain Clinical Conditions in Children. A. S. Minot and Katharine Dodd, Nashville, Tenn.—p. 522.

Encephalitis and Measles. — Peterman and Fox studied thirteen cases of encephalitis complicating measles. The cases conform to the typical picture as reported in that in twelve the onset occurred between two and six days after the onset of the rash and in one in eight days. In all but one the encephalitis began with stupor or drowsiness, and in this case the onset was characterized by restlessness and convulsions. Eleven patients (two were not so examined) exhibited a polymorphonuclear leukocytosis ranging from 12,600 to 26,000 leukocytes per cubic millimeter even up to fifteen days after the onset. The percentage of polymorphonuclears ranged from 74 to 84. All fluids were clear and seven were under increased pressure. The cell count ranged from 5 to 380, of which from 40 to 98 per cent were lymphocytes. The globulin was positive in six of the eleven fluids so tested. The sugar ranged from 71 to 125 mg. per hundred cubic centimeters in the eight fluids so tested. The colloidal gold test was made on six fluids; in three it was negative, and in three positive. The authors propose three theories in the explanation of encephalitis complicating measles: (1) It is the result of a virus independent of measles, (2) it is an allergic or anaphylactic phenomenon or (3) it is a virus activated by the measles organism. On the basis of the remarkable consistency in the clinical picture and observations in most established cases of encephalitis complicating measles, viz., time of onset in relation to the rash, the fever, the drowsiness or convulsions, the polymorphonuclear leukocytosis, the pleocytosis and the increased sugar in the spinal fluid and the pathologic changes, the authors are inclined to believe that the condition is a clinical entity produced by some specific virus or organism.

Acute Pyothorax.—Bloch and Parrish treated by aspiration and air replacement fourteen infants and children having acute pyothorax following pneumonia. The apparatus consists of a 30 cc. Luer syringe and a large needle. Fairly certain location of the empyema should be made clinically and roentgenologically. The left thumb is pressed against the lower border of the upper rib, thus protecting the intercostal artery, vein and nerve. The needle is inserted through the intercostal space directly beneath the thumb. By the aspiration of pus, it is definitely ascertained that the needle is in the empyema cavity. A syringeful of pus is then removed and an equal amount of air is injected with the same syringe. This is repeated until on aspiration no pus enters the barrel. The injection of an additional 10 or 15 cc. of air will facilitate the aspiration of any remaining pus. Tappings are repeated every four to seven days.

Guanidine Intoxication.—The procedure that Minot and Dodd used for the determination of guanidine is essentially the earlier method described by Major and Weber with a few minor changes. The estimation was carried out on protein-free filtrates prepared from blood by the method of Folin and Wu. This filtrate contains the interfering salts and nonprotein extractives of blood and the guanidine in far too great dilution for colorimetric estimation. Before the color test is made, most of the salts are removed, creatine is converted to creatinine and the guanidine concentrated in a small volume of solution. In the authors' experience the highest concentrations of guanidine occurred in patients presenting rapid loss of fluid in diarrhea or having extensive necrosis in burns or acute injury of the liver, or in certain types of overwhelming infection. Apparently hyperguanidinemia is a result of secondary factors rather than an essential feature of any particular disease. The intoxications seen clinically are in many respects similar to intoxication produced by experimental guanidine poisoning and are relieved by calcium therapy. The authors believe that calcium medication is a valuable supplement to the common therapeutic measures employed in the management of such toxemias.

American Journal of Medical Sciences, Philadelphia

186: 313-460 (Sept.) 1933

Acetyl-β-Methylcholin: I. Action on Normal Persons, with Note on Action of the Ethyl Ether of β-Methylcholin. I. Starr, Jr., K. A. Elsom and J. A. Reisinger, with introduction by A. N. Richards, Philadelphia.—p. 313.

Id.: II. Action on Gastro-Intestinal Tract of Normal Persons, in Abdominal Distention and in Certain Other Conditions. W. O. Abbott, Philadelphia.—p. 323.

Id.: III. Its Action on Paroxysmal Tachycardia and Peripheral Vascular Disease, with Discussion of Its Action in Other Conditions. I. Starr, Jr., Philadelphia.—p. 330.

*Diagnostic Test for Infectious Mononucleosis. W. W. Bunnell, New Haven, Conn.—p. 346.

Instance of Lymphatic Leukemia Following Benzol Poisoning. E. H. Falconer, San Francisco.—p. 353.

Advantages of Intramuscular Injections of a Solution of Liver Extract in Treatment of Pernicious Anemia. W. P. Murphy, Boston.—p. 361.

Congenital Aorticoventricular Fistula with Engrafted Acute Suppurative Endocarditis. M. Jacobi and A. Heinrich, Brooklyn.—p. 364.

*Serial Nonprotein Nitrogen Studies and Their Prognostic Significance in Acute Coronary Occlusion: Preliminary Report. C. L. Steinberg, Rochester, N. Y.—p. 372.

Serum Calcium in Normal Boys. M. Molitch, S. Weinstein and R. F. Cousins, Jamesburg, N. J.—p. 378.

Calcium Precipitations and Alkalization in Aerobic Tissue Cultures. W. C. Hueper and Mary A. Russell, Philadelphia.—p. 383.

*Typhoid Vaccine in the Treatment of Chorea. A. Capper and E. L. Bauer, Philadelphia.—p. 390.

Spontaneous Rupture of the Esophagus: Report of Four Cases. R. Gott, Jr., Louisville, Ky.—p. 400.

Amebiasis in Northern New Jersey. M. Asher and M. Kraemer, Newark, N. J.—p. 409.

Arachnidism: Report of a Series of Twenty-Nine Cases of Poisoning from the Bite of Latrodectus Mactans. G. Walsh and W. G. Morgan, Fairfield, Ala.—p. 413.

Diagnostic Methods and Metabolic Studies in Disease of Biliary Tract: I. Description of Routine Examination and Discussion of Normal Standards. J. R. Twiss and J. A. Killian, New York.—p. 418.

Galactose Tolerance as a Measure of Liver Function. J. H. Roe and A. S. Schwartzman, Washington, D. C.—p. 425.

Diagnostic Test for Infectious Mononucleosis.—Bunnell employed the sheep cell agglutinin test in more than 2,000 cases representing seventy-six clinical conditions. With the exception of serum disease, he has been unable to demonstrate an appreciable increase of heterophil agglutinins for sheep cells in the serums above the normal dilution of 1:8. In fifteen cases of infectious mononucleosis he observed a consistent increase in all cases. The titers, ranging from 1:64 to 1:4,096, apparently depended to a considerable extent on the stage of the disease at which the serum was obtained and on the severity of the illness. None of the common conditions manifesting a similar clinical picture, such as acute adenitis, tuberculous or syphilitic adenitis, Hodgkin's disease, acute or chronic lymphatic or myelogenous leukemia, aplastic anemia, hemorrhagic purpura, agranulocytic angina or Vincent's angina, have shown an increase in heterophil agglutinin titer. Cases presenting a suggestive clinical and blood picture, whose blood serum shows an agglutination for sheep cells in a dilution of at least 1:64, can apparently safely be diagnosed as infectious mononucleosis, and a favorable prognosis given.

Nonprotein Nitrogen and Acute Coronary Occlusion.—Steinberg emphasizes the function of the kidney in coronary occlusion. A certain pressure is needed in the arterial system

for the kidney to carry on its normal function. His observations in acute coronary occlusion do not coincide with the thought that in essential hypertension the elevated blood pressure is a safety mechanism so that the vital renal function may be performed. He presents sixteen cases, in two of which the drop in blood pressure and a definite and marked diminution in urinary output are not sufficient in themselves to account for the nonprotein nitrogen factor in acute coronary occlusion; for, although both had a decided and marked drop in blood pressure and a diminution in urinary output, the nonprotein nitrogen did not become markedly elevated. His study of the retention of nonprotein nitrogen in the blood plasma in the sixteen cases of coronary occlusion indicates that nine showed a nonprotein nitrogen retention that was above 40 mg. per hundred cubic centimeters (one had 40 mg.). Of the six fatal cases, only one showed a nonprotein nitrogen below 40, and three showed progression or retention of waste products in the blood stream or continued elevation without necessarily progression in the amount of nonprotein nitrogen. Three patients in whom serial nonprotein nitrogen studies were made and who showed a definite tendency toward lowering of the nonprotein nitrogen value recovered. None of the cases examined post mortem showed evidence of any marked nephritis.

Typhoid Vaccine in Treatment of Chorea.—Capper and Bauer treated twenty-three cases of chorea, nine of which were chronic, by means of typhoid-paratyphoid vaccine intravenously: nineteen were entirely symptom free at the time of discharge from the hospital. Of the nine chronic cases in which the average duration of the symptoms was four and one-half years, one showed a persistent talkativeness and one a persistent blinking of the eyes, but all other symptoms had disappeared. One patient who suffered from chorea for two months was improved following the vaccine injections, but the authors were unable to continue their observations because of a transfer to another hospital soon after the injections were completed. Only one of the twenty-three cases, a subchronic one, was definitely refractory, and the twitchings and irregular movements persisted in spite of the treatment; nevertheless, when the patient returned three months later for follow-up examination, he was entirely well. A reexamination of eleven cases, from three to fifteen months subsequent to discharge, showed seven and possibly eight to be entirely well, in spite of the fact that over 50 per cent of them belonged to the class of chronic chorea. No untoward effects were noticed in any of the patients from the vaccine injections. The authors' method consisted in injecting intravenously a mixture of typhoid, paratyphoid A and paratyphoid B vaccine, each cubic centimeter containing 500,000,000 of typhoid and 250,000,000 each of paratyphoid A and B organisms. The initial dose was from 0.15 to 0.2 cc. When the patient did not react to the initial dose or to an increase of 0.1 cc. daily, the increase in dosage was made more rapidly. The injections were continued daily, usually for six or seven days, when a rest period of several days was instituted. If the child did not recover completely after the first series of six or seven injections, a second, third or even fourth series of injections was instituted.

American J. Obstetrics and Gynecology, St. Louis

26: 311-470 (Sept.) 1933

Recent Advances in Study of Etiology and Treatment of Eclampsia Gravidarum. J. Hofbauer, Baltimore.—p. 311.

Induction of Labor by Means of Artificial Rupture of Membranes, Castor Oil and Quinine, and Nasal Pituitrin. D. G. Morton, San Francisco.—p. 323.

*Disturbances of Menstruation Due to Simple Achlorhydric Anemia. R. L. Haden, Cleveland, and J. M. Singleton, Kansas City, Kan.—p. 330.

Nature of Periods of Sex Desire in Woman and Their Relation to Ovulation. O. L. Tinklepaugh, Orange Park, Fla.—p. 335.

Tetanospasmodic Uterine Rings: Report of Four Cases. J. Weiss, New York.—p. 346.

Primary Carcinoma of Oviduct. J. A. McGlinn and W. B. Harer, Philadelphia.—p. 354.

Some Statistics of Postpartum Hemorrhage. C. H. Peckham and K. Kuder, Baltimore.—p. 361.

Analysis of Two Hundred Cases of Septic Abortion Treated Conservatively. J. T. Witherspoon, New Orleans.—p. 367.

*Preventing Postnatal Loss of Weight in the New-Born. I. N. Kugelmass, Ruth E. L. Berggren and Mildred Cummings, New York.—p. 375.

Rupture of Cesarean Scar in Succeeding Pregnancy. W. R. Nicholson, Philadelphia.—p. 387.

Premature Rupture of Membranes and Its Effect on Labor. L. W. Mason, Denver.—p. 394.

Application of Universal Joint to Obstetric Forceps. J. Mann, Toronto.—p. 399.

*Evaluation of Alurate (Allyl-Isopropyl-Barbituric Acid) as Premedication Agent in Surgery: Preliminary Report. M. L. Axelrod, Cleveland.—p. 404.

Eczema in Pregnancy. G. Gellhorn, St. Louis.—p. 408.

Spinal Anesthesia in Series of Three Hundred Abdominal and Pelvic Operations. P. N. Charbonnet, Tulsa, Okla.—p. 412.

An Analysis of Two Hundred Cases of Spinal Anesthesia. M. Sabel, Philadelphia.—p. 417.

Cervical Cauterization Under Parametrial Anesthesia. L. Braun, Detroit.—p. 421.

Dührssen's Incisions of the Cervix. M. M. Shir, Brooklyn.—p. 425.

Granulosa Cell Tumors of the Ovary: Report of Two Cases. S. A. Wolfe and S. Kaminester, Brooklyn.—p. 434.

Toxic Neuronitis of Pregnancy. S. Lubin, Brooklyn.—p. 442.

*Technic of Injection of Pudendal Nerve and Branches of Small Sciatic Nerve with Observations Made on One Hundred Cases of Delivery. Elizabeth O'Hearn and C. H. Knauer, Mahanoy City, Pa.—p. 444.

Intravenous Pituitary Extract in Low Cervical Cesarean Section: Report of One Hundred Cases. R. J. Heffernan, Boston.—p. 446.

Hydrops Tubae Profluens Complicating Chronically Perforating Appendicitis: Report of a Case in a Girl of Twelve Years. A. T. Walker, Mare Island, Calif.—p. 448.

Dystocia Due to Carcinoma of the Rectum and of the Vagina. W. F. Mengert, Philadelphia.—p. 451.

Rupture of Symphysis Pubis During Labor: Case. P. A. D'Acierno, Union City, N. J.—p. 455.

Sarcoma of Uterus Complicating Pregnancy. M. G. DerBrucke, Brooklyn.—p. 457.

Extraneous Foreign Bodies in the Urinary Bladder, with Especial Reference to Their Occurrence Among Women. L. C. Scheffey and C. Lintgen, Philadelphia.—p. 460.

Acute Intestinal Obstruction Complicating Labor. E. M. Lazard, Los Angeles.—p. 462.

Wandering Fibroid in Rectovaginal Septum. J. P. Long, Jr., Memphis, Tenn.—p. 463.

Placenta Praevia with Twins. C. D. McCann, Brockton, Mass.—p. 464.

Menstrual Disturbances Due to Achlorhydric Anemia.—Haden and Singleton studied the menstrual disturbances in twenty-nine cases of simple achlorhydric anemia. Abnormalities of menstruation are found commonly in this disease and constitute one of its most characteristic features. Achlorhydria with idiopathic hypochromic anemia is pathognomonic of the disease. The disease probably belongs in the deficiency group and responds well to the administration of adequate doses of iron. Simple achlorhydric anemia should be suspected in all cases of unexplained menstrual disturbances and the suspicion verified or excluded by gastric analysis and careful blood examination. In the authors' series the menstrual disturbances occurred almost as frequently as symptoms due directly to the low hemoglobin content of the blood.

Loss of Weight in the New-Born.—Kugelmass and his associates point out that the initial loss in weight in the newborn can be prevented by the oral administration of a solution consisting of 6 per cent gelatin (p_H 6.2), 3 per cent dextrose and 0.5 per cent sodium chloride at intervals of two hours throughout the twenty-four-hour cycle immediately after birth. The characteristic clinical picture of the new-born is a result of birth shock and is more effectively combated by a hydrating solution than by milk mixtures during the first two or three days of life. The total fluid intake of the new-born properly conditioned to both the breast and the bottle was as much as twice that of the series receiving the routine nursery care. Preventing the loss of weight in the new-born produces rapid disappearance of the so-called physiologic apathy, somnolence and stupor secondary to birth shock and the compensated acidosis universally present. The new-born infant shows a hypoglycemia during the first days of life and a sugar tolerance curve of low peak, thus indicating a dire need for carbohydrate as well as a tendency to utilize, store and exhaust their endogenous supply of carbohydrate more rapidly than older children. Determinations of the refractive index and viscosity of the serum of the new-born revealed the concentration of the blood on the first days of life, gradually attaining normal values following administration of food in the control series; but the new-born treated with the hydrating solution showed a markedly constant course for both refractive and viscosimetric curves. The gelatin component of the hydrating solution decreased the clotting time to less than three minutes, in comparison with seven minutes in the control series.

Premedication Agent in Surgery.—Axelrod studied the advantages of allyl-isopropyl-barbituric acid (alurate) in 150 surgical cases. He found the barbiturate to have definite clini-

cal advantages as previously suggested by animal experimentation. The oral administration of the substance, in tablet or capsule form, is a satisfactory method. The optimal dose appears to be 10 mg. per kilogram of body weight (i. e., approximately 1 grain [0.065 Gm.] for every 15 pounds of body weight, excessive fat, as in obese patients, being discounted). Using a divided dosage is rational and satisfactory. Side actions occur less often than have been reported from large single doses of other barbiturates. The volume of the anesthetic can be appreciably reduced. There does not seem to be any marked delay in the occurrence of the postoperative reaction. The need for postoperative nursing care not only is not increased, as reported for some barbiturates, but is diminished in most cases.

Injection of Pudendal Nerve.—O'Hearn and Knauer used the following technic in seventy-six private and twenty-four ward patients: With the patient in the gynecologic position the inner margin of the tuberosity of the ischium is located and, at a point on a line with the anus but close to the ischium, the tip of the needle is inserted in the direction of the spine of the ischium, which is palpated through the vagina or rectum. The tip of the needle when inserted about 5 cm. encounters the resistance of the perineal fascia, beyond which there seems to be an open cavity. The pudendal nerve leaves the pelvis through the greater sacrosciatic foramen, circles the spine of the ischium and reenters the pelvis through the lesser foramen. Therefore, by palpating the spine with the fingers of one hand and using it as a guide, it is possible to inject the solution at the proximal edge of the spine and cause complete anesthetization of the pudendal nerve and the structures which it supplies. Ten cc. of a 1:500 solution of pantocain is injected into this region. The needle is withdrawn until its tip is free from the perineal fascia and then is redirected upward and outward onto the face of the tuberosity of the ischium, when the remaining 3 to 5 cc. of the solution is injected. This solution is massaged upward over the surface of the tuberosity, through the potential space existing between the gluteus maximus muscle and the tendinous insertions of the extensor group of muscles, thereby anesthetizing the perineal branches of the small sciatic nerve, which are constantly present in this space. A complete anesthesia to the sense of pain was manifested in all the structures composing the floor of the perineum, including the lower third of the vagina and the posterior half of the labia majora, and the perineum may be "ironed out" painlessly as well as sutured. The time of injection is not until the head is on the perineum and the membranes are ruptured and every assurance is offered that the continuance of labor will not exceed four and a half hours, which is the average duration of this anesthetic with 1 cc. of 1:1,000 epinephrine added. Its effect, without epinephrine, continues for two hours.

American Journal of Physiology, Baltimore

105: 497-726 (Sept. 1) 1933. Partial Index

Differences Between Anterior Pituitary Sex-Stimulating Hormones and Pregnancy-Urine Substances as Tested in the Male Mammal and Bird. J. A. Schockaert, New York.—p. 497.

Action of Thyroxine on Tissue Respiration. J. A. Dye, Ithaca, N. Y. —p. 518.

The Sherrington Phenomenon: v. Nervous Pathways. J. C. Hinsey and C. C. Cutting, San Francisco.—p. 535.

Studies in Normal Human White Blood Cell Picture: I. Variations in Recumbent Basal Subjects and in Individuals with Change of Posture. E. Jones, D. J. Stephens, Harriett Todd and J. S. Lawrence, Rochester, N.Y.—p. 547.

Studies on Thyroglobulin: III. Thyroglobulin Content of Thyroid Gland. B. O. Barnes and Mildred Jones, Chicago.—p. 556.

Pulmonary Artery Pressures. C. F. Horine and C. G. Warner, Baltimore.—p. 562.

Effect of Diet on Response to Parathyroid Extract and Vitamin D: III. Effect of Low Calcium-High Phosphorus Diets in Dogs. Agnes Fay Morgan, E. Alta Garrison and Marguerite J. Hills, Berkeley, Calif.—p. 608.

*Variations of Intragastric Temperature in Response to Vasodilating Agents. N. W. Thiessen and A. M. Snell, Rochester, Minn.—p. 665.

Sugar in Blood and Subcutaneous Lymph Following Insulin Administration. J. W. Heim, Boston, and B. N. Berg, New York.—p. 674.

Further Quantitative Studies in Absorption: Influence of Acetylcholine on Absorption of Glucose. E. Gellhorn and D. Northup, Chicago.—p. 684.

Proteins as Stimulants for the Secretion of Pepsin. Elizabeth R. B. Smith and G. R. Cowgill, New Haven, Conn.—p. 697.

Variations of Intragastric Temperature.—Thiessen and Snell studied the variations of intragastric temperatures of patients suffering from ulcers of the gastro-intestinal tract in relation to vasodilating drugs and test meals. After stimulation with histamine, the mean rise in oral temperature was 0.25 C., and the mean rise in rectal temperature was 0.19 C. The mean fall in intragastric temperature was 0.18 C. initially, and then it made a rise above the initial temperature comparable to the rise noted in rectal and oral readings. After acetylcholine, the intragastric temperature rose on an average 0.16 C., as compared to a rise of 0.08 C. for the rectal temperatures and insignificant variations in oral temperatures; it made a sharp rise at the two hour reading. A peripheral and visceral dissociation was not so marked after the administration of acetylcholine as when histamine was used. After the administration of alcohol, the rectal and oral temperatures rose gradually. After an initial drop, the mean rise of intragastric temperature was 0.4 C.; then the temperature dropped to normal. A definite splanchnoperipheral dissociation was apparent in 60 per cent of the experiments. The dissociation of visceral from peripheral reactions affecting the temperature was most apparent after the administration of histamine, less so but fairly definite after alcohol, and variable after acetylcholine. In the presence of artificially produced fever the maximal mean rise of oral temperature was 0.56 C., of the rectal temperature 0.59 C., and of the intragastric temperature 1 C. In only 20 per cent of the cases was a definite splanchnoperipheral dissociation seen, although this phenomenon may have been overlooked in the other 80 per cent. The theoretical relationship of splanchnic vasodilatation to temperature has been considered. Additional evidence has been presented to support the concept of a splanchnoperipheral balance.

American Review of Tuberculosis, New York

28: 293-410 (Sept.) 1933

*Shrunken Pulmonary Lobe with Chronic Bronchiectasis. O. R. Jones and A. Cournand, New York.—p. 293.

Heart and Tuberculosis: Mediastinal Distortion as a Source of Circulatory Embarrassment. D. M. Brumfiel, Saranac Lake, N. Y.—p. 317.

Experimental Bone and Joint Tuberculosis in Rabbits. P. J. Trudel, Perrysburg, N. Y.—p. 331.

Investigation and Operative Exploration and Treatment of Old Tuberculous Cavitation, with Especial Reference to Pneumonocavernolysis. H. Neuhof, Secaucus, N. J.—p. 344.

Secondary Diaphragmatic Rises Following Phrenic Neurectomy. D. O. N. Lindberg, Decatur, Ill.—p. 352.

Tuberculous Lung in Which a Large Emphysematous Bulla Was Mistaken for a Cavity. W. S. Miller, Madison, Wis.—p. 359.

Tuberculosis in the Hawaiian: Study of School Children of Hawaiian Blood. F. J. Halford, Honolulu, Hawaii.—p. 370.

Tuberculosis in Infants and Primitive Races. Wathena Myers Johnson and J. A. Myers, Minneapolis.—p. 381.

Shrunken Lobe with Bronchiectasis.—Jones and Cournand present, as an entity, the shrunken pulmonary lobe with chronic bronchiectasis and prove by clinical observations two probable mechanisms in the causation of pulmonary shrinkage: bronchial stenosis and chronic inflammation of the lung. In many instances a combination of these two pathologic states exists, as shown by one of their cases. They believe that, besides the stenosis of a bronchus from outside pressure due to congested lymph nodes, the loss of the normal bronchial function and the inflammation of the bronchial tree by infection from the lymph nodes are definite factors in the causation of bronchiectasis. The authors are fully aware of the fact that there are many other causes of bronchial stenosis with resultant pulmonary shrinkage, but they do not discuss them, as the cases they present seem to them to be attributable to bronchial stenosis and chronic inflammation of the lung. They discuss the question of the congenital origin of this condition and present two cases of chronic bronchiectasis with shrunken lobes due to possible congenital causes.

Archives of Internal Medicine, Chicago

52: 341-496 (Sept.) 1933

Ultimate Results of Thoracoplastic Operations in Pulmonary Tuberculosis. J. J. Wiener and M. Fishberg, New York.—p. 341.

*Iron in Human Blood. A. Sachs, V. E. Levine and A. Appelsis, Omaha. —p. 366.

Insensible Perspiration: Its Relation to Basal Metabolism. G. E. Wilson, Seattle.—p. 378.

*Therapeutic Application of Acidophilus Milk in Simple Constipation: Report of Thirty-Six Cases. L. Weinstein, J. E. Weiss, L. F. Rettger, New Haven, Conn., and M. N. Levy, Bridgeport, Conn.—p. 384.

Cinchophen Poisoning: Report of Two Cases with Histologic Observations. H. H. Permar and H. D. Goehring, Pittsburgh.—p. 398.
Fatty Infiltration of the Myocardium. O. Saphir and M. Corrigan, Chicago.—p. 410.
Cardiac Weights. V. Levine and J. G. Carr, Chicago.—p. 429.
Clinical Studies of Respiration: III. Influence on Expiratory Position of the Chest in Man of an Inspired Air Which Is Low in Oxygen and High in Carbon Dioxide, and of Resistance to Inspiration and to Expiration. J. A. Greene, Iowa City.—p. 447.
Id.: IV. Some Observations on Cheyne-Stokes Respiration. J. A. Greene, Iowa City.—p. 454.
Effect on Idiopathic Hypochromic Anemia of Beef Steak (Hamburger Steak) Digested with Normal Gastric Juice. R. T. Beebe, Albany, N. Y., and M. M. Wintrobe, Baltimore.—p. 464.
Cinchophen Toxicosis: Results of Experimental Subacute and Chronic Cinchophen Poisoning. A. J. Lehman and P. J. Hanzlik, San Francisco.—p. 471.

Iron in Blood.—Sachs and his associates determined the iron content of whole blood in a large series of normal male and female subjects. They experimented on 100 medical students (men), varying in age from 20 to 25 years, and fifty nurses (women), varying in age from 20 to 30 years. They found that the average iron content of whole blood of the 100 normal men was 50.01 ± 2.56 mg. per hundred cubic centimeters. The average for the fifty normal women was 42.67 ± 2.13 mg. per hundred cubic centimeters. The blood of women has a definitely lower iron content than that of men. Iron in whole blood is almost entirely linked with the hemoglobin molecule. Since the quantity of nonhemoglobinous iron present in the serum and the cellular elements is very small, the error in calculating hemoglobin from whole blood iron is negligible. On the basis that hemoglobin contains 0.335 per cent of iron, the authors conclude that the average normal blood of men contains 14.93 ± 0.76 Gm. of hemoglobin per hundred cubic centimeters, while the average normal blood of women contains 12.74 ± 0.66 Gm. per hundred cubic centimeters. By dividing the number of milligrams of iron per hundred cubic centimeters of blood by the first three figures of the red blood cell count, a quotient, which Murphy, Lynch and Howard designated as the iron index, is obtained. The authors found the iron index for normal men to be 10.01 ± 0.65 Gm., and for normal women 9.6 ± 0.56 Gm. of hemoglobin per hundred cubic centimeters. The iron index is preferable to the color index because of the greater accuracy with which the former may be determined. The iron color index, based on the ratio of the percentage of iron to the percentage of red blood cells, is also preferable to the older hemoglobin color index. The advantages to be derived from the clinical use of this index lie in its accuracy and in the retention of the convenient $+1$ or -1 designation of the older hemoglobin color index.

Acidophilus Milk in Constipation.—Weinstein and his associates treated thirty-six patients suffering from simple chronic constipation with acidophilus milk (1 quart daily), the cultures of which were known to be of high viability. All were ambulant. Of the patients who underwent the treatment, twenty-seven reacted favorably and seven responded negatively, and in their cases the treatment was regarded as having failed. Two gave results that were neither positive nor negative. Of those who responded positively, fourteen were so-called implanters; that is, they maintained a high acidophilus content in the intestine for from twelve to sixteen weeks after the discontinuance of the last course of milk treatment. During this period, no return to the former condition of constipation was noted. Two other patients showed distinct improvement sixteen weeks after the cessation of the treatment but Bacillus acidophilus was not demonstrable in their feces. The results indicate that the most favorable response will be obtained by the continued use of the milk over reasonably long periods, with interruptions (so-called rest periods) of from four to twelve weeks or even longer. Whether the administered aciduric organism actually becomes implanted in the intestine of the patient who responds positively after many weeks of feeding and intermission, or whether the constant application of the acidophilus milk under favorable conditions of diet (with milk, lactose or dextrin) stimulates to activity similar or closely related strains native in the intestine must be left an open question. Either of these two eventualities should lend strong support to the acidophilus principle.

Idiopathic Hypochromic Anemia.—Beebe and Wintrobe gave five patients suffering from idiopathic hypochromic anemia beef steak with normal gastric juice, according to the method used by Castle in causing a remission in pernicious anemia. In no instance was there an increase in the percentage of reticulocytes or a rise of the hemoglobin, the volume of packed red cells or the red blood count. Following the administration in each instance of suitable amounts of iron ammonium citrate, the percentage of the reticulocytes rose promptly and there soon followed a rapid increase of hemoglobin, an increase in the volume of packed red blood cells and improvement in the patients' symptoms and general appearance.

Delaware State Medical Journal, Wilmington

5: 195-222 (Sept.) 1933

Recent Advances in Treatment with Historical Notes. H. I. Goldstein, Camden, N. J.—p. 195.
Value of Diet in Treatment of Arthritis and Migraine. M. B. Holzman, Wilmington.—p. 212.

Florida Medical Association Journal, Jacksonville

20: 89-138 (Sept.) 1933

Review of Some Urinary Anomalies and Pathologic Conditions Producing Symptoms of Especial Interest to the General Practitioner. R. J. Holmes and M. M. Coplan, Miami.—p. 99.
Carcinoma of the Colon: Plea for Recognition of Early Symptoms. G. M. Dawson, West Palm Beach.—p. 106.
Cesarean Section: Phase in the Unwise Modern Obstetric Trend. R. W. Holmes, Chicago.—p. 110.

Georgia Medical Association Journal, Atlanta

22: 319-360 (Sept.) 1933

Diagnosis and Treatment of Aneurysm. J. L. Campbell, Atlanta.—p. 319.
Bismuth Poisoning in Treatment of Syphilis. J. W. Brittingham, Augusta.—p. 323.
Operative Technic and Postoperative Treatment of Fulminating Appendicitis. J. T. McCall, Rome.—p. 327.
Management of Chronic Arthritis. G. J. Dillard, Columbus.—p. 332.
Prevention of Deafness. J. A. Smith, Macon.—p. 338.
Diagnosis and Treatment of Bronchiectasis with Iodized Oil. W. G. Elliott, Cuthbert.—p. 340.
Rupture of Uterus During Labor. R. Bell, Thomasville.—p. 342.
Oral Treatment of Syphilis in Negro Children with Acetarsone (Stovarsal). J. Yampolsky, laboratory collaboration by D. F. Cathcart and I. Smith, Atlanta.—p. 344.
Use of Salyrgan in Cardiac Decompensation with Edema: Case Report. R. W. Dickson, Atlanta.—p. 348.

Illinois Medical Journal, Chicago

64: 209-304 (Sept.) 1933

The Diagnosis of Chronic Arthritis. D. Boyd, Highland Park.—p. 229.
Treatment of Arthritis by Electropyrexia. D. E. Markson and S. L. Osborne, Chicago.—p. 231.
Methods of Producing Hyperpyrexia by Various Physical Agents. J. R. Merriman and S. L. Osborne, Chicago.—p. 237.
*Endocrine Dyscrasias and Mental Disorders: Preliminary Report. J. H. Hutton, Chicago; R. Brandon, Springfield; C. F. Read and J. T. Nerancy, Elgin.—p. 242.
Foreign Bodies in the Esophagus. C. U. Collins, Peoria.—p. 247.
Id. C. D. Sneller, Peoria.—p. 250.
Relation of the Health Officer to the Community. A. Ailes, La Salle.—p. 253.
Etiology of Ocular Disease. H. S. Gradle, Chicago.—p. 258.
Care of the Indigent. R. K. Packard, Chicago.—p. 261.
Military Hygiene. A. P. Hitchens, Fort Sheridan.—p. 264.
Physical Measures in Hypertrophic Rhinitis. A. R. Hollender, Chicago.—p. 269.
Value of Combined Cholecystographic and Liver Function Studies. H. Swanberg, Quincy.—p. 273.
Perineal Lacerations: Method of Conducting the Second Stage of Labor Which Will Lessen Their Occurrence. R. F. Weissbrenner, Chicago.—p. 274.
Surgery of Thyroid in Children. W. L. Bowen, Peoria.—p. 277.
The Master in the House of Medicine. A. M. Schwitalla, St. Louis.—p. 280.
What I Would Tell a Lay Audience About Venereal Diseases. Carolyn N. Macdonald, Chicago.—p. 288.
Some of the Obstetric Problems of the Country Doctor. E. E. Davis, Avon.—p. 294.
Socialization of Medicine. E. F. Garraghan, Chicago.—p. 298.

Endocrine Dyscrasias and Mental Disorders.—Hutton and his associates attempted to determine whether there was a relationship between endocrine dyscrasias and mental disorders and whether correction of the endocrine disturbance would be valuable in the treatment of mental disorders. The pituitary products used were a commercial soluble extract from the anterior lobe of the pituitary (antuitrin) and posterior lobe extracts. They were administered hypodermically three times

a week in such doses as the patient could tolerate. The dose of posterior lobe extracts was kept below that which produced unpleasant abdominal cramps. The anterior lobe extract was given in doses of from 0.5 to 1 cc., depending on the patient's tolerance. Ovarian medication consisted of the residue or of one of the standardized preparations, more often the residue, and one ampule was given subcutaneously three times a week. If a standardized preparation was used, it was given on alternate days beginning a week before the expected menstrual period. Thyroid has been given by mouth. Of 172 patients recognized as having some endocrine defect, 26.7 per cent are now paroled or discharged, whereas the discharged and paroled patients from all the state institutions during the year ended June 1931 were only 17.3 per cent. This does not mean that endocrine therapy will replace the accepted psychiatric routine but that endocrine therapy should become a routine adjuvant to the psychiatric procedure when indicated.

Journal of Allergy, St. Louis

4: 455-570 (Sept.) 1933

Allergen Content of Pollen Extracts: Its Determination and Its Deterioration. A. Stull, R. A. Cooke and Jean Tennant, New York. —p. 455.

Use of Glycerolated Pollen Extracts in Treatment of Hay Fever. A. Brown, New York.—p. 468.

Further Observations on Changes in Skin Tests Following Specific Pollen Therapy. A. Colmes and F. M. Rackemann, Boston.—p. 473.

Status Asthmaticus or Severe Subacute Asthma. J. A. Clarke, Jr., Philadelphia.—p. 481.

Allergy a Constant Factor in Etiology of So-Called Mucous Nasal Polyps. R. A. Kern and H. P. Schenck, Philadelphia.—p. 485.

Further Observations on Nature of Allergy. F. M. Rackemann, F. A. Simon, Margaret G. Simon and Margaret A. Scully, Boston.—p. 498.

Hypersensitiveness to Acetylsalicylic Acid Expressed by an Angina Pectoris Syndrome With and Without Urticaria. C. Shookhoff and D. L. Lieberman, Brooklyn.—p. 506.

Angina Pectoris Syndrome, Activated by Ragweed Sensitivity in a Patient with Coronary Vessel Sclerosis: Case Report. C. Shookhoff and D. L. Lieberman, Brooklyn.—p. 513.

Treatment and Prevention of Rhus Toxicodendron Poisoning. G. H. Gowen, Chicago.—p. 519.

Common Weed Tansy (Tenacetum Vulgare) as a Cause of Eczematous Dermatitis. C. A. Greenhouse and Marion B. Sulzberger, New York. —p. 523.

Contact Dermatitis Due to a Common Plant. C. H. Harville, Warsaw, N. Y.—p. 527.

Extreme Hypersensitiveness to Heat: Report of Case. O. Swineford, Jr., and H. Weinberg, University, Va.—p. 530.

Urinary Proteose in Allergic Conditions. L. Tuft and M. Brodsky, Philadelphia.—p. 534.

Treatment of Bronchial Asthma by Sterile Abscess Formation. W. Lintz, Brooklyn.—p. 540.

Hypersensitivity to Acetylsalicylic Acid.—Shookhoff and Lieberman report three cases of hypersensitivity to acetylsalicylic acid expressed by a syndrome of angina pectoris, accompanied in two cases by urticaria. None of the characteristic signs of myomalacia of the heart were present. A study of one case showed definite allergic manifestations and definite electrocardiographic changes in the attack produced by the ingestion of acetylsalicylic acid. The electrocardiographic changes disappeared before the subsidence of the reaction. This syndrome was produced in the patient with every administration of acetylsalicylic acid and was to some degree controlled by the administration of epinephrine. There were evidences of preexisting cardiovascular disease in all three patients.

Rhus Toxicodendron Poisoning.—Gowen used the almond oil extract of Rhus toxicodendron in the treatment and prevention of eight cases of Rhus toxicodendron poisoning. The patients were from 5 to 54 years of age. One injection in the spring will protect susceptible persons for approximately one year. Injection of the almond oil extract not only is satisfactory therapeutically but also offers protection for the rest of the season and leads to milder attacks the ensuing year. Two patients were immune for one year without treatment after several annual injections. In two patients who are exposed annually, immunity has been present for two years in one and five years in the other. The site of injection was the deltoid in adults and older children and the gluteal muscles in the young children. The skin was sterilized with tincture of sodium of ethylmercurithiosalicylate, the injection was made deep into the muscle, and a large drop of collodion was placed round the site of injection before the needle was withdrawn. This prevented any egress of Rhus toxin and eliminated the possibility of any local dermatitis of the skin round this area. In no case was less than 1 cc. (one injection) of extract used. More than two injections were never needed. Noticeable improvement varied from one to three days after injection.

Urinary Proteose.—Tuft and Brodsky demonstrated the presence of an ether-extractable substance, described as "urinary proteose" by Oriel, in the sixty-one examinations of the urine of forty-two allergic patients in slightly larger amounts than in the nonallergic controls, and, although larger amounts were eliminated than in the quiescent periods, positive skin reactions of a specific character could not be elicited nor was treatment in three cases of chronic asthma followed by any improvement. It is doubtful from these observations and a review of the literature whether the proteose of Oriel has a specific immunologic basis.

Journal of Lab. and Clinical Medicine, St. Louis

18: 1203-1318 (Sept.) 1933

Insulin Resistance and Sensitivity. W. G. Karr, C. W. Scull and O. H. Petty, Philadelphia.—p. 1203.

*Glucose Tolerance Curves in Pulmonary Tuberculosis: Observations on One Hundred Cases. D. W. Kramer, with technical assistance of Freda Ward, Philadelphia.—p. 1212.

Cholelithiasis: Statistical Study, with Especial Reference to Its Frequency in the Colored Race. R. H. Jaffe, Chicago.—p. 1220.

Study of Total and Ultrafiltrable Calcium and Acid-Soluble Phosphate Content of Blood Serum of Four Hundred and Twenty-Two Healthy Children. Marion Smoot Needels and C. M. Marberg, Chicago.—p. 1227.

Study of Dimethylaminobenzaldehyde Test for Atropine. Arlie A. O'Kelly and C. F. Poe, Boulder, Colo.—p. 1235.

Significance of Membranes in Mucous Form of Colitis. J. Friedenwald and S. Morrison, Baltimore.—p. 1242.

Some Factors Responsible for So-Called Self-Disinfecting Power of the Skin. C. S. Bryan and W. L. Mallmann, Lansing, Mich.—p. 1249.

*Possibility of Pressor Principle in Blood of Persons with Hypertension: Experimental Study. A. H. Elliot and F. R. Nuzum, Santa Barbara, Calif.—p. 1255.

Monocytic Leukemia. W. M. Fowler, Iowa City.—p. 1260.

Simple One-Stage Technic for Hepatectomy in the Dog: Some Remarks on Clinical Symptomatology of Terminal Hepatic Insufficiency. J. Markowitz, W. M. Yater and W. H. Burrows, Washington, D. C.—p. 1271.

*Determination of Nonprotein Nitrogen, with Especial Reference to Koch-McMeekin Method. C. A. Daly, Albany, N. Y.—p. 1279.

Micro-Kjeldahl Still. T. P. Nash, Jr., Memphis, Tenn.—p. 1285.

Study of Kolmer, Kahn and Kline Tests with Spinal Fluids. Lucy S. Heathman and Margaret Higginbotham, Minneapolis.—p. 1287.

Pulmonary Tuberculosis.—Kramer studied the curves of the blood sugar of 100 tuberculous patients divided in two series, series A including patients who at one time or other had glycosuria and series B being the control group. The fasting blood sugars were invariably of normal range. Diabetic patients were not included. The author offers suggestions for classifying the curves of the blood sugar: type I, the high or diabetic curve; type II, the normal curve, and type III, the low curve. There were seventeen patients showing a high or diabetic curve. Twelve of this number were found in series A. Eighty-three patients had nondiabetic curves; fifty-nine were normal and twenty-four showed low curves. The 17 per cent diabetic curves were much below the figures mentioned by some authors. The influence of the state of the tuberculosis on the curve of the blood sugar is indefinite. Although an occasional case of increased tolerance for carbohydrates may be observed in the late stages of tuberculosis, the author was unable to point out any direct bearing on the curves in the patients studied. He believes that the low proportion of diabetic curves and the comparatively high percentage of low curves may be interpreted as an indication that tuberculous patients have a higher tolerance for sugar and may explain the rarity of diabetes developing in tuberculosis.

The Pressor Principle, the Blood and Hypertension.—With a mercury manometer, Elliot and Nuzum registered the carotid blood pressure of a full grown rabbit under anesthesia with sodium amytal (0.08 Gm. per kilogram of body weight in the vein of the ear). The blood to be tested was drawn with a large needle from the antecubital vein and the syringe emptied into a flask containing enough sodium citrate to make a total concentration of 0.4 per cent. The blood was brought immediately to the laboratory and injected into the external jugular vein of the rabbit. The lapse of time from the with-

drawal of the blood to its injection was about five minutes. The amount of blood injected was 3 cc. per kilogram of body weight. The lethal dose of the blood from persons both with normal blood pressure and with hypertension was approximately the same (from 6 to 8 cc. per kilogram). The patients from whom the blood was obtained were carefully studied as to renal function, degree of arterial disease and height and lability of the blood pressure. With the exception of one patient who had malignant hypertension and renal failure and one who had a coronary thrombosis resulting in a lasting fall of the blood pressure, they belonged to the essential hypertensive group with constantly elevated quite stable blood pressures. Blood from laboratory workers and medical students having normal blood pressures was used for the control determinations. In most instances the result was a transitory rise of pressure followed by a prolonged fall. The average initial rise of pressure of the animals receiving blood from patients having hypertension was slightly greater and generally more prolonged than that observed in the control series. Alcohol, water and ether-soluble fractions of such blood gave uniformly a transitory fall in blood pressure. The hypothesis of a pressor principle in the blood stream of persons having consistently elevated blood pressures should be subjected to further experimental study for confirmation or refutation.

Determination of Nonprotein Nitrogen.—Daly describes a modified Koch method for the determination of nonprotein nitrogen, in which to 5 cc. of blood filtrate in a tube, graduated at 35 and 50 cc., 1 cc. of the sulphuric acid-dioxide digestion mixture 2 (prepared by adding 3 cc. of a 30 per cent solution of hydrogen dioxide to 47 cc. of the stock solution of sulphuric acid [stock solution of sulphuric acid is prepared by adding 225 cc. of concentrated sulphuric acid to 245 cc. of distilled water in a liter flask]) and two glass beads or a quartz pebble is added. This is heated with the full flame of the micro burner until the dense white fumes of sulphur trioxide appear, the mouth of the tube is closed with a small funnel and the flame is regulated until the digestion mixture barely boils. The material should be completely oxidized and the digestion mixture will be colorless. If there is a definite brown color due to unoxidized material, the digestion mixture is too weak and more dioxide should be added. The gentle heating should be continued for about two minutes and then the tube should be removed from the flame. There are usually significant amounts of dioxide present at the end of the digestion but they do not interfere when the solution is nesslerized. When occasional determinations are made it is more convenient to use digestion mixture 1 (prepared by adding 6 cc. of water to 94 cc. of the stock solution of sulphuric acid) and adding the oxidizing agent separately. When the digested material is cold, 1 cc. of a 1 per cent solution of gum ghatti is added and diluted to 35 cc. In another tube 1 cc. of digestion mixture 1 without dioxide, 3 cc. of the standard nitrogen solution and 1 cc. of solution of gum ghatti is added and diluted to 35 cc. Nessler's solution with sodium citrate, 15 cc., is measured into a small cylinder and with the 35 cc. solutions of nitrogen it is poured simultaneously into a 400 cc. beaker, whirled and poured back into the graduated combustion tube. The solutions should be at room temperature when nesslerized. After the air bubbles have disappeared the nesslerized solutions should be crystal clear. The standard and unknown solutions are nesslerized as near together as possible and read at once in the colorimeter. Calculation of the results is made in the regular way.

Maine Medical Journal, Portland

24: 161-182 (Sept.) 1933

The Challenge of Cancer. C. C. Little, Bar Harbor.—p. 165.
Preputial Cancer. F. E. Clow, Wolfeboro, N. H.—p. 169.

Medical Annals of District of Columbia, Washington

2: 197-218 (Sept.) 1933

Early Diagnosis of Cancer of Rectum and Rectosigmoid. J. Horgan, Washington.—p. 197.
Recurrent Malignant Obstruction of Prostate, Unrelieved by Prostatectomy, Treated by Transurethral Resection: Report of Five Cases. W. C. Stirling and G. A. Hopkins, Washington.—p. 200.
Results of Treatment of Gonorrheal Ophthalmia. E. J. Cummings, Washington.—p. 203.
"Apparently in Good Health Prior to the Accident." K. Garve, Los Angeles.—p. 205.

Missouri State Medical Assn. Journal, St. Louis

30: 351-388 (Sept.) 1933

Rôle of Hepatic Insufficiency in Surgical Problems. W. H. Cole, St. Louis.—p. 351.
Management of Hepatic Disease. C. A. Elliott, Chicago.—p. 356.
Relationship of the Liver to Other Visceral Organs in Disease. F. C. Helwig, Kansas City.—p. 359.
Cirrhosis of the Liver. G. H. Hoxie, Kansas City.—p. 363.
Jaundice. D. R. Black, Kansas City.—p. 366.
*Acute Abdominal Symptoms in Heart Disease. A. M. Ginsberg, Kansas City.—p. 370.
Narcolepsy. E. T. Gibson, Kansas City.—p. 373.
The Increasing Significance of Allergy in General Practice. C. J. Reis, St. Louis.—p. 376.

Abdominal Symptoms in Heart Disease.—Ginsberg states that chronic abdominal symptoms are produced by valvular disease with decompensation and disease of the coronary artery with or without decompensation. Acute abdominal symptoms are produced by (1) disease of the coronary artery (angina pectoris and coronary thrombosis), (2) valvular disease (subacute bacterial endocarditis with or without emboli, mitral stenosis and congestive heart failure, right ventricle), (3) pericardial disease (acute pericarditis with or without effusion) and (4) arrythmias (auricular fibrillation with or without emboli, auricular flutter, paroxysmal tachycardia and bundle-branch block).

New York State Journal of Medicine, New York

33: 1025-1082 (Sept. 1) 1933

Medical Aspect of Diseases of Bones and Joints. T. Howard, Brooklyn.—p. 1025.
Diagnosis of Diseases of Bones and Joints: Few Remarks Concerning the Diagnosis of Fractures. F. S. Child, Port Jefferson.—p. 1027.
First Aid in the Treatment of Fractures. O. C. Hudson, Hempstead.—p. 1029.
Common Diseases of Bones and Joints in Children. W. C. A. Steffen, Flushing.—p. 1031.
Diseases of Bones and Joints: Procedures in Physical Therapy. J. Weiss, Brooklyn.—p. 1034.
Treatment of Chronic Multiple Arthritis. G. E. Anderson, Brooklyn.—p. 1036.
Polycythemia Vera: Report of Ten Cases Treated with Phenylhydrazine. K. R. McAlpin and Katharine S. Edsall, New York.—p. 1039.
Psychopathic Personality. J. L. McCartney, Elmira.—p. 1045.
Physical Therapy in Dermatology. P. E. Bechet, New York.—p. 1049.

Ohio State Medical Journal, Columbus

29: 529-600 (Sept. 1) 1933

Littré's Hernia: A Meckel's Diverticulum in a Hernia Sac with Report of a Case. S. C. Lind, Cleveland.—p. 549.
Gas Gangrene Septicemia as Complication of Pregnancy. C. W. Pavey and H. L. Reinhart, Columbus.—p. 551.
Intravenous Liver Extract Therapy in Pernicious Anemia. W. Payne and H. H. Brittingham, Cleveland.—p. 553.
*Oral Bismuth in Treatment of Syphilis. R. O. Brigham, Toledo.—p. 556.

Oral Bismuth in Treatment of Syphilis.—Brigham treated a number of patients suffering from syphilis with glycerite of bismuth, administered orally. There has been marked improvement both clinically and serologically. The dosage is often run up to 20 minims (1.3 cc.) three times a day. In weak and poorly nourished patients this dosage shows slightly toxic results, manifested first in a soreness of the gums similar to that due to mercury. When the dosage is reduced, these symptoms quickly disappear. Glycerite of bismuth has long been used as a tonic, and patients usually remark that they feel much better after taking the bismuth preparation. In no case in which it has been used has the preparation failed to produce good clinical results, and only in a few cases did it fail to produce excellent serologic results. The medication of this form of bismuth was frequently continued for a period of three months with a brief rest and then another period of three months to clear up old cases. The oral administration of bismuth has proved a palatable way of giving the drug and is well tolerated by the patients, and many of them prefer it to hypodermic medication. The advantage over the hypodermic medication is that the patient is getting a continuous daily supply of bismuth, and not in large doses at frequent intervals.

West Virginia Medical Journal, Charleston

29: 365-400 (Sept.) 1933

Infant Mortality: Sensitive Index of Social Welfare. G. M. Lyon, Huntington.—p. 365.
Medical Service. D. A. MacGregor, Wheeling.—p. 373.
Acute Surgical Abdomen. M. A. Slocum, Pittsburgh.—p. 376.
Back Injuries. H. E. Mock, Chicago.—p. 383.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Physical Medicine, London

8: 69-84 (Sept.) 1933

Ultrashort Electric Waves: New Development in Diathermy. E. Schliephake.—p. 69.
Present Status of Physical Therapy in the United States. R. Kovacs.—p. 72.
Absorption of Infra-Red Radiation by Human Body. B. D. H. Watters.—p. 74.
The Field of the Light Department in a General Hospital. A. E. Rayner.—p. 76.
Practical Dietetics. J. N. Leitch.—p. 77.

British Journal of Urology, London

5: 213-322 (Sept.) 1933

*Pharmacologic Basis of Drug Treatment of Spasm of Ureter or Bladder and of Ureteral Stone. K. Samaan.—p. 213.
*Studies of Urinary Acidifiers and Antiseptics in Relation to Pyelitis and Cystitis. D. R. Mitchell and J. M. Scott.—p. 225.
Carcinoma of the Penis in Siam. T. P. Noble.—p. 242.
Spread of Infection from the Uterine Cervix to the Urinary Tract and Ascent of Infection from Lower Urinary Tract to Kidneys. H. P. Winsbury-White.—p. 249.

Drug Treatment of Spasm of Ureter.—Samaan carried out a series of experiments to determine the degree of action of definite dilutions of papaverine, visammin or atropine on the intestine and the virgin uterus of the rabbit, the ureter of the bull, the human ureter and the bladder of the dog. He found that atropine relaxes the intestine and the virgin uterus of the rabbit, the ureter of the bull and of man and the bladder of the dog if already put in a state of spasm through parasympathetic stimulation, whereas it fails to relax these organs if the cause of the spasm is directly muscular. For the bladder or for the uterus, visammin and papaverine are practically of equal values in relaxing these organs. Relaxation results if the spasm is mediated through the nerve, the muscle or both. Papaverine and visammin relax plain muscle tissue by direct action. In the same concentrations, papaverine is a more efficient drug than visammin on the intestine, while the contrary is true for the ureter of the bull and of man. This makes visammin a drug superior to papaverine in the treatment of spasm of the ureter and of ureteral stone. Relaxation results if the spasm is mediated through the nerve, the muscle or both. The superiority of visammin over papaverine or atropine in relaxing the human ureter as established by pharmacologic experiments led to its clinical trial in cases of ureteral stone. Stones were passed through the natural passages after treatment with a warmed mixture containing 5 cc. of tincture of ammi visnaga (1 : 10 solution of 90 per cent alcohol) and 30 cc. of decoction of ammi visnaga (1 : 40) taken three or four times daily with an occasional intermission of the drug.

Urinary Acidifiers and Antiseptics in Pyelitis and Cystitis.—Mitchell and Scott present a clinical study of seventy-five cases of pyelitis and cystitis in which urinary antiseptics and acidifiers were used. They observed that ammonium phosphate and benzoate are effective urinary acidifiers, but a change of p_H has no influence on the infection. Hexylresorcinol, pyridium and helmitol have given no evidence of a urinary antiseptic value. Methenamine in well acidified urine cures at least one third of the nonsurgical cases of pyelitis and cystitis. Methenamine is liberated at the kidney pelvis, at least, and is as effective for pyelitis as it is for cystitis. Resistance to formaldehyde may be due to an individual characteristic of the organism. Focal infection (colonic absorption) seems to have a place in the etiology and treatment of persisting infections of the urinary tract. Urinary infection in simple pyelitis of pregnancy persists and disappears only post partum.

Journal of State Medicine, London

41: 497-558 (Sept.) 1933

Industrial Welfare Under Existing Conditions. T. Oliver.—p. 497.
Economic Test of the Limits of Public Health. J. Stamp.—p. 505.
Airs, Waters and Places: Study of Their Data. G. T. Walker.—p. 511.
Records of Vapor Pressure. F. J. W. Whipple.—p. 523.
Value and Place of Serodiagnosis in the Clinical Investigation of Cancer. E. C. Lowe.—p. 530.
Impressions of the Tuberculosis Problem in Germany. Veronica B. F. Dawkins.—p. 539.
Principles and Practice of Health Education. A. Massey.—p. 545.

Lancet, London

2: 521-572 (Sept. 2) 1933

Experimental Pathologic Studies on Nature and Rôle of Bacterial Allergy. A. R. Rich.—p. 521.
*Generalized Osteitis Fibrosa: Case Successfully Treated by Removal of Parathyroid Tumors. A. L. Abel, G. Thomson and L. M. Hawksley.—p. 525.
Adenoma of Parathyroid Associated with Generalized Osteitis Fibrosa. S. C. Dyke, R. M. Walker and E. Freeman.—p. 530.
Clinical Comparison of Beta and Gamma Ray Therapy for Rodent Ulcer. W. J. O'Donovan and R. T. Brain.—p. 532.
Rectal Incontinence: Causes and Treatment. J. P. Lockhart-Mummery.—p. 535.
Human Trematode Parasite Heterophyes Heterophyes in Egypt: Life History. M. K. Bey.—p. 537.

Osteitis Fibrosa and Parathyroid Tumors.—Abel and his associates report a case of osteitis fibrosa, which was successfully treated by the removal of parathyroid tumors, in a woman aged 58. She had had several attacks of quinsy, acute appendicitis and Bacillus coli pyelitis two years before. Her health was good until the urgent operation for acute appendicitis was performed. After the operation she never felt that she could walk properly. Her strength did not seem to improve, and twelve months before she noticed that instead of becoming stronger she was actually much weaker. She had weakness of all her limbs, but more especially of the right arm. Pain was felt over the middle of the left leg and appeared to be in the bone itself. She always felt tired and faint. The pain in the leg increased, and a swelling appeared over the anterior aspect of the left tibia and increased in size up to 2 inches in vertical diameter. More indefinite aching pains were noticed in the other extremities. Roentgenography showed a cystic area in the left tibia at the junction of the upper and middle thirds and at the inner part of the upper end, involving both the shaft and the epiphysis. The knee joints showed calcification on the surfaces of the cartilages. Microscopic examination showed the changes typical of osteitis fibrosa. Further roentgenographic examination revealed parathyroid tumor. After a rest of ten days and a high calcium diet, the patient was operated on under nitrous oxide-oxygen anesthesia. A Kocher low collar incision was made and the left side was explored first. A superior parathyroid, about three times the normal size, was found and removed. On the right side, four small rounded bodies were found behind the lower part of the thyroid bed. Two were removed for microscopic observation. They were found to be lymph nodes. The thyroid was replaced in its bed, the pretracheal muscles were sutured and the wound was closed, after drainage was provided for. Seventy-two hours after operation the serum calcium had fallen to 12.5 mg. per hundred cubic centimeters. On the sixth day two attacks of paroxysmal tachycardia occurred. Digitalis was administered, with hypodermic injections of morphine. The pulse remained rapid for some days but gradually became normal. A fortnight after operation the serum calcium was still 12.5 mg. Convalescence from then on was quite uneventful. A high calcium diet was administered as soon as possible after operation, with viosterol and ultraviolet radiation. Ten weeks after operation the pains of the bones had disappeared. The patient was steadily gaining weight and was able to walk a little.

Medical Journal of Australia, Sydney

2: 235-264 (Aug. 19) 1933

Further Observations on Chronic Nephritis and Lead Poisoning in Queensland, with Comments on Federal Official Inquiry. L. J. J. Nye.—p. 235.
Treatment of Uterine Cancer. E. T. Thring.—p. 249.
Treatment by Radon of Glandular Extension from Malignant Cervix. L. S. Kidd.—p. 253.

2: 265-298 (Aug. 26) 1933

*Comparison of Blood Sedimentation Rate and Vernes Flocculation Test in Pulmonary Tuberculosis. H. M. James.—p. 265.
Idiopathic Scoliosis. S. H. Scougall.—p. 271.
*Swift's or Pink Disease: Recent Work on Pathology and Treatment. S. F. McDonald.—p. 276.
Investigation into Incidence of Cancerous or Precancerous Skin Lesions Among Tar Workers in New South Wales. Elinor S. Hunt.—p. 281.

Blood Sedimentation Rate and Vernes Flocculation Test in Tuberculosis.—James confirms the work of previous authors in that both the determination of the rate of blood sedimentation and the Vernes flocculation test are of considerable value in the control of the treatment and prognosis in

cases of pulmonary tuberculosis. Provided all precautions were taken, and with certain recognized exceptions, the figures for the two tests were comparable, particularly in infections that were comparatively early or but moderately advanced. In the advanced cases it was felt that the Vernes test represented the clinical condition less accurately than did the rate of blood sedimentation. Of the two methods of investigation, it must be considered that the estimation of the rate of blood sedimentation is more applicable to everyday clinical work and that there is no information given by the Vernes test which cannot equally be supplied by the rate of blood sedimentation. The advantages of the latter method may be summarized as follows: 1. The Vernes test, because of elaborate laboratory methods and material, is a much more expensive test than the sedimentation test. 2. Any medical practitioner can do a sedimentation test at the bedside if necessary. 3. The rate of sedimentation actually gives considerably more information than the Vernes test. In the Vernes test, one has only an end figure. 4. The 1 cc. technic for the sedimentation test is a simple matter for the patient and occasions practically no discomfort. For the Vernes test it is necessary to withdraw at least 10 cc. of blood. For the Vernes test also a fast of about fifteen hours is necessary before the test is made. 5. Blood for the Vernes test must be sent to a laboratory in which there are the requisite facilities. The sedimentation test may be performed anywhere.

Swift's or Pink Disease.—McDonald gives an account of recent work on the etiology and pathology of pink disease. He describes six cases that were apparently benefited by liver treatment. He used a preparation of pig liver. It can be made up as a soup or mixed with other food. Adults generally do not consider it palatable; children with pink disease will often take it freely undiluted. The dose for an adult patient with pernicious anemia is from 5 to 10 cc. three times daily. For the child with pink disease, 5 cc. twice a day is sufficient.

South African Medical Journal, Cape Town

7: 561-602 (Sept. 9) 1933

Combined Anesthesia in Surgery. F. D. du T. van Zyl.—p. 579.

Japanese Journal of Experimental Medicine, Tokyo

11: 253-396 (Aug. 20) 1933

*Anemia Causing Action of Various Hydrazine Derivatives, Their Influence on Oxygen in the Blood and Their Relation to Their Chemical Structure: I. Anemia Causing Action of Various Hydrazine Derivatives and Their Relation to Their Chemical Structure. S. Minami.—p. 253.

Progress of Hemolysis and Some Other Phenomena Relative to Hemolysis. H. Moriyama.—p. 301.

Relation Between Endocrine Gland and Estrus Cycle: Appendix to the First Report: Ovulation in Case of Transplantation of Anterior Lobe of Pituitary Body in the Very Young Female White Rat. S. Tsuchimoto.—p. 349.

*Effect of Bismuth on Experimental Akiyami. T. Moriguchi.—p. 353.

Studies on Variation of Bacterium Dysenteriae (Shigae). S. Takata.—p. 357.

Purification of Vaccinia Virus: Note. H. Yaoi and H. Kasai.—p. 383.

Sterilizing Action of Unsaturated Monobasic Fatty Acids on Putrefactive Bacteria, Bacteria Typhosus and Vibrio Cholerae. S. Tetsumoto.—p. 387.

Anemia-Causing Action of Hydrazine Derivatives.—Minami found no anemia-causing action in hydrazine sulphate. Chemicals that have the benzine nucleus, such as phenylhydrazine, *p*-tolylhydrazine, α-metaxylylhydrazine, *p*-nitrophenylhydrazine, *p*-methoxyphenylhydrazine and *p*-ethoxyphenylhydrazine hydrochloric acid, have a fairly strong anemia-causing action. Chemicals having the naphthaline nucleus have also a fairly strong anemia-causing action but show generally slightly weaker action than chemicals having the benzine nucleus. Chemicals having the quinoline nucleus have a weaker anemia-causing action than those having the benzine nucleus. Among the chemicals having the benzine nucleus, if phenylhydrazine hydrochloric acid is taken as the standard and one methyl radical is added to the benzine nucleus of phenylhydrazine hydrochloric acid, the anemia-causing action of the chemical decreases. The action appears to decrease with the increases in the number of methyl radicals. The addition of the nitro radical to the benzine nucleus of phenylhydrazine hydrochloric acid increases the strength of the anemia-causing action. The phenylhydrazine hydrochloric acid having the methoxy radical slightly increases the anemia-causing action and that having the ethoxy radical shows nearly the same degree of anemia-causing action as phenylhydrazine. In the case of the carboxyl radical to the benzine nucleus, the anemia-causing action disappears entirely. The β-naphtylhydrazine hydrochloric acid shows a stronger anemia-causing action than the α-naphtylhydrazine hydrochloric acid. Anaquinolinhydrazine hydrochloric acid shows a stronger anemia-causing action than orthoquinolinhydrazine hydrochloric acid.

Effect of Bismuth on Experimental Nanukayami.—Moriguchi tested the effect of bismuth on nanukayami (an endemic infectious disease resembling Weil's disease) by infecting guinea-pigs with Spirochaeta akiyami A; the results were satisfactory. After inoculating guinea-pigs with Spirochaeta akiyami A, he injected subcutaneously a 1 per cent solution of potassium and sodium bismuth tartrate every twenty-four hours, using 1 cc. per hundred grams of the body weight. The controls showed characteristic symptoms of nanukayami and had spirochetes in the liver. No animal injected immediately after inoculation developed symptoms of nanukayami. As no spirochetes were noted by dark field examination, the author made an emulsion of the liver to verify whether or not it had infective power for test animals and found that it had not. Seven animals were injected twenty-four hours after inoculation, of which two were observed to live normally for more than a month. The others died, but no lesion was discovered at necropsy to implicate nanukayami as the cause of death. Of three animals injected forty-eight hours after inoculation, one lived more than a month, and the other two showed no lesions of nanukayami at necropsy. The animals injected seventy-two hours after inoculation followed the same fate as the controls in one or two days. But the symptoms peculiar to nanukayami were much slighter and no spirochetes were discovered in the liver. The author shows that potassium and sodium bismuth tartrate has a positive effect when injected within forty-eight hours after inoculation (and even when injected seventy-two hours after inoculation) and concludes that potassium and sodium bismuth tartrate has a remarkable effect both as a preventive and as a curative.

Journal of Oriental Medicine, South Manchuria

19: 13-22 (Aug.) 1933

Observations on Recent Mortality Statistics of Japanese in Manchuria: Part I. S. Kawahito.—p. 13.

Id.: Part II. S. Kawahito.—p. 16.

Effect of Sulphur on Antitoxic Function Against Hydrocyanic Acid. C. Tsuru.—p. 18.

Comparative Study of Various Solid Cultural Mediums and Kirchner's Fluid Medium: Isolation of Tubercle Bacilli. H. Hiroki and K. Urabe.—p. 19.

Effect of Various Metal Salts on Therapeutic Action of Arsphenamines in Spirochetosis. H. Hiroki.—p. 20.

Effect of Reflexes Produced by Stimulation of Second and Third Trigeminal Branches on Respiration and Blood Pressure. G. Nakamura.—p. 21.

19: 23-38 (Sept.) 1933

Experimental Investigations on Persistence of Spironema Recurrentis in Brain. H. Hiroki.—p. 23.

Biochemical Studies on Nitril: Part I. (Supplement No. 2). Formation of Rhodan Compound Within the Bodies of Lower Vertebrates. C. Tsuru.—p. 27.

Effect of "Péchka" Heating on Ventilation. K. Matsuoka.—p. 28.

Clinical Stand Against Assumption of Respiratory Paralysis as Cause of Death in Spinal Anesthesia with Tropacocaine. K. Shimotsuma, T. Imagawa and H. K. Su.—p. 29.

*"Slowly Developing Meningococcus Sepsis"? and Its Treatment with Trypaflavine. K. Kashiwabara.—p. 30.

Rhodan Compound Content of Serums of Various Animals. C. Tsuru.—p. 31.

Pathologic Histology of Sclerosis of Lymph Nodes. E. Kitabatake.—p. 33.

Experimental Studies of Postdiphtheritic Paralysis: Chapter IV. Histologic Studies on Central Nervous System in Case of Postdiphtheritic Paralysis. T. Maki.—p. 34.

Patterns of Ridges of Skin on Toes of Chinese. S. Takeya.—p. 36.

Treatment of Meningococcus Sepsis with Acriflavine Hydrochloride.—During the last few years, Kashiwabara encountered five cases which presented high remittent fever, eruptions closely resembling erythema nodosum and arthralgia. He made clinical observations in each case and states that the present cases most closely corresponded in their clinical appearance with the "slowly developing meningococcus sepsis" described by Friedmann and Deicher. However, he could not demonstrate meningococci in the blood of each patient. He used injections of acriflavine hydrochloride and cured each patient.

Journal de Chirurgie, Paris

42: 497-672 (Oct.) 1933

Technical Point in Resection of Cancerous Breast. P. Duval and H. Redon.—p. 497.
Surgery of Parathyroids. H. Welti and A. Jung.—p. 501.
*Immediate Treatment of Fractures of Base of Skull. C. Lenormant, P. Wertheimer and J. Patel.—p. 529.
Surgical Treatment of Severe Gastroduodenal Hemorrhages of Ulcerous Origin. F. Papin and P. Wilmoth.—p. 559.

Immediate Treatment of Fractures of Base of Skull.—Lenormant and his associates say that, in the first twenty-four hours, abstention from treatment is indicated on the one hand in hyperacute cases exhibiting signs of prostration, fever of 40 C. (104 F.) and abolition of the corneal reflex and, on the other hand, in so-called benign cases in which the symptoms recede quickly. Signs of intracranial hematoma are an indication for surgical treatment. If an extradural hemorrhage is discovered after the skull has been opened, the clots must be carefully removed and the source of the hemorrhage located if possible. If temporal trepanation discloses a dura mater that is violet and taut and the clinical signs indicate intracranial hematoma, the meninges should be incised. If neither an extradural nor a subdural hematoma is found, exploration of the opposite side of the head may disclose a counterblow lesion. In cases of deep intracranial hematoma, the results of this second examination are negative. In the cases of grave cerebral concussion the choice of treatment is governed by the succession of physiopathologic phenomena. It is of prime importance to measure the arterial and spinal fluid pressure, as the symptoms of hypotension and hypertension are often similar. In primary hypotension, from 20 to 40 cc. of distilled water should be injected intravenously and, if this fails, from 500 to 1,000 cc. of physiologic solution of sodium chloride. In hypertension there is the choice between lumbar puncture with manometric control and hypertonic medication. In certain grave cases, interpretation of the signs is uncertain although indispensable to rational treatment. The cause of a syndrome of intracranial hypertension may remain obscure and the Queckenstedt-Stookey test and measurement of the tension of the central artery of the retina may be necessary to determine whether the hypertension is free or blocked. In the latter case, ventricular exploration by puncture at the inferior occipital point may disclose one of three conditions. Both ventricles may be obliterated by cerebral edema or, rarely, bilateral hematomas: bilateral temporal trepanation is the only logical therapy under those circumstances. If one of the ventricles is dilated while the other one is obliterated, trepanation of the fornix on the affected side is indicated. If the result is negative, evacuation of the dilated ventricle by puncture is indicated. In some cases, ventricular puncture may disclose dilatation of both ventricles. This may be due to obliteration of the passages connecting the intracerebral system with the subarachnoid spaces or to the insufficiency of these passages. Withdrawal of ventricular fluid may suffice if the drainage passages are free; if they are not, repeated evacuations will bring no improvement and drainage of the subarachnoid spaces at the posterior cisterna magna is required. The authors discuss the treatment to be given after the first thirty-six hours in cases that did not show early improvement. Continued hypotension demands the injection of water or physiologic solution of sodium chloride. Secondary hypertension is much more frequent. It imposes temporal trepanation in cases in which a reassuring clinical picture in the first twenty-four or forty-eight hours is succeeded by more complete coma, epileptiform crises or paralyses, indicating a localized lesion. Temporal trepanation is not satisfactory in exacerbation of the concussion syndrome with discovery of blood in the subarachnoid spaces indicating compression or irritation of the medulla and in cases in which cerebrospinal block exists. In the latter cases if the fluid obtained by suboccipital puncture is bloody and hypertensive, the block is perimedullary or cervical; if it is not, the obstacle is located higher up. In cases of hypertrophic concussion, trepanation with an osteoplastic flap (Arnaud) on both lateral surfaces of the fornix or, perhaps, posterior trepanation may be employed, but in all other cases suboccipital drainage is indicated.

Presse Médicale, Paris

41: 1681-1704 (Nov. 1) 1933

Migratory Projectiles. R. Piédelièvre and P. Étienne-Martin.—p. 1681.
*Combination of Vaccine Therapy and Serum Therapy in Preventive Treatment of Tetanus. Mme. C. Clavel and C. Clavel.—p. 1683.
*Specificity of Weinberg Reaction in Diagnosis of Echinococcosis. J. Outeirino Nunez and M. Calvelo Lopez.—p. 1684.

Vaccine and Serum Therapy in Prevention of Tetanus.—The Clavels state that in rare instances patients have succumbed to tetanus or presented manifestations of attenuated tetanus despite correctly executed surgical disinfection and prophylactic serotherapy. To prevent such occurrences they recommend that antitetanus serotherapy be supplemented by vaccination with tetanus anatoxin in cases in which the patient has one or more wounds that may remain infected with tetanus bacilli for a long time. To the passive immunity, rapidly induced by the serotherapy but of brief duration, vaccination adds an active immunity, which is slowly produced but of very long duration. The combined therapy gives the patient a maximal guarantee against the danger of tetanus which is not only an immediate but a long term menace in certain cases. Vaccination with anatoxin is absolutely innocuous; it may be employed simultaneously with serotherapy and confers an immunity that lasts for several years. Vaccination with anatoxin is indicated in the case of a wound the evolution of which is long and may require successive interventions. Conservative interventions require antitetanic vaccination more than amputations, as they often take longer to heal and may retain a tetanus infection despite the vigilance of the surgeon. Vaccination is also indicated in case of multiple traumas, since in the presence of a grave trauma, as for instance rupture of the spleen, smaller wounds of the face or the extremities might receive insufficient attention. In the aforementioned cases the authors give an injection of from 10 to 20 cc. of antitetanus serum immediately after the accident. Then with another syringe and at a different point, a subcutaneous injection of 0.5 cc. of anatoxin is given; ten days later they inject 1 cc. of anatoxin and two months later 2 cc. of anatoxin. In case of reintervention several months or years later, from 1 to 2 cc. of anatoxin is again injected, and in this case a new antiserum injection can probably be dispensed with. In time of war all soldiers should receive antitetanus vaccination and in civilian practice it should be given to all laborers whose profession exposes them to frequent injuries susceptible to tetanic infection.

The Weinberg Reaction in Diagnosis of Echinococcosis.—From a series of experiments, Outeirino Nunez and Calvelo Lopez conclude that the Weinberg reaction, a complement fixation reaction for the diagnosis of echinococcosis which uses the fluid from hydatid cysts of sheep as antigen, is not specific for hydatid disease but is rather a group reaction. This conclusion is based on the following experimental results: 1. The antigen prepared by them from Taenia saginata (alcoholic extract) fixes complement in the presence of serums of patients with hydatid cysts with intensity as great as or greater than the fluid from the cysts of sheep. 2. The serums of patients harboring intestinal taenias, of animals infested with various forms of taenia or their embryos, and of animals immunized by parenteral administration of proteins derived from these parasites give equally positive reactions with the extract of taenia and with the hydatid antigen. 3. Positive results were also obtained with both antigens in certain nonparasitic diseases. 4. In general, inactivation is followed by the destruction of amboceptors in varying degrees, the reactions being weaker with the heated serums than with those used without inactivation.

Schweizerische medizinische Wochenschrift, Basel

63: 1121-1144 (Nov. 4) 1933

Appendicitis: Cases Observed from 1928 to 1932 at Hospital Frauenfeld. W. Isler.—p. 1121.
*Tissue Injuries of Chemical Origin, Particularly Necroses Caused by Ink Pencils. J. de Puoz.—p. 1124.
*Icterus Neonatorum Gravis with Especial Consideration of Infectious Type. H. Fuchs.—p. 1129.
Determination of Blood Sedimentation. W. Hadorn.—p. 1134.
Pemphigus: Case. G. Franck.—p. 1138.

Injuries Caused by Ink Pencils.—Experimental and clinical observations convinced de Puoz that the noxious agent in

ink pencil injuries is the dyestuff component, which is always an aniline dye. The greater the alkalescence of the dyes, the greater also their harmfulness. A prolonged influence of the aniline dyes results in headaches, loss of appetite, general debility and increased temperature. Early appropriate treatment prevents the general reactions. Studies of the local symptoms disclosed that the portions of the ink pencil that have entered the tissues are dissolved by the tissue fluids. The dissolved dye becomes diffused and exerts a necrotizing effect. The injuries produced by ink pencils are particularly severe when they involve a mucous membrane, especially the conjunctiva, where they produce extensive ulcerations. The author gives a summary report of thirty-three injuries produced by ink pencils. This report indicates that surgical therapy gives better results than conservative measures. The author recommends the radical excision of all tissues that have become discolored by the dye. Subsequent irrigation with tannin and wet dressings accelerate the healing process, and some authors have seen favorable effects from after-treatment with ultraviolet rays.

Icterus Neonatorum Gravis.—In a review of the literature on icterus neonatorum gravis, Fuchs shows that it largely concerns itself with the familial form. It is his aim, however, to differentiate distinct groups and to call particular attention to an infectious form. In four children, who developed a severe icterus during the first three days of life, he discovered a septic infectious process either during life or in the course of the necropsy. In three of them the infection originated in the umbilicus. All four children had convulsions or spasm of the muscles of the extremities as signs of a cerebral involvement. The children were apathetic and did not nurse normally. Their stools showed biliary discoloration. The blood either showed no erythroblastosis or the values were still within normal limits. In three cases the urine contained dissolved bilirubin. All but one of the children died within the first two weeks of life. Since the children were the first ones in their families to develop icterus neonatorum, the cases could not be definitely diagnosed as the familial form. The first two of the children were siblings, and consequently the familial form could be thought of; since the most characteristic symptom, erythroblastosis, was absent, however, the diagnosis was not made. The author considers it probable that this family may have a predisposition to severe icterus or a susceptibility to infections. In the second and third cases the same bacterial flora was found in the vagina of the mother and in the umbilical pus of the infants. The fourth infant showed nearly all the signs of the familial form of icterus neonatorum gravis. The presence of the septic infection was the only factor that militated for a differential diagnosis of infectious icterus neonatorum. In his discussion of the familial form, the author shows the significance of the differentiation between the two forms. In addition to these two types he recognizes yet a third type of icterus neonatorum gravis. To this group he assigns all cases that are neither familial nor infectious. Whether in this third form there exists a deficient capacity for independent extra-uterine existence cannot be definitely determined as yet.

Archivio Italiano di Chirurgia, Bologna

34: 749-864 (Sept.) 1933

*Pulmonary and Thoracic Actinomycosis. P. Foltz and G. Canavero. —p. 749.
Experiences in Numerical Enrichment and Method of Distribution of Fibers in Nerve Regeneration. A. M. Dogliotti.—p. 781.
*New Method of Approach to First Two Ribs in Operation of Apicolysis. R. Broglio.—p. 819.
Frei Test in Inguinal Lymphogranulomatosis. M. Cattaneo.—p. 829.
Variations of Calcium Content of Blood Serum in Animals Operated on for Sympathectomy of Superior Thyroid Arteries. A. Previtera. —p. 846.

Pulmonary and Thoracic Actinomycosis.—Foltz and Canavero made a study of a patient suffering from bilateral pulmonary actinomycosis with involvement of the pleura and the thoracic wall. The authors do not recognize the existence of two separate forms of pulmonary actinomycosis, the superficial and the ulcerative. They demonstrate that it has no anatomic basis but only a pathogenic one. They distinguish between actinomycosis involving pulmonary tissue alone (superficial actinomycosis of other authors) and that of a pulmonary thoracic variety. In the latter they distinguish between pulmonary actinomycosis spreading to the thorax and primary actinomycosis of the thorax spreading to the lung. Regarding the pulmonary origin of the pulmonary thoracic form, the authors attribute the notable presence of pseudo-adenomatous formations to proliferation of the bronchial epithelium.

Approach to Ribs in Apicolysis.—Broglio describes the following operative technic: The patient assumes the position ordinarily used in intervention on the thyroid with the head extended and turned slightly away from the side operated on. The intercostal nerves are blocked with a 0.5 per cent solution of tutocain, and a 0.25 per cent solution is used for infiltration anesthesia. A rectangular incision is made, starting 5 cm. above the sternoclavicular articulation, passing over the joint and ending at the upper margin of the second costal cartilage; the horizontal limb of the incision follows the upper margin of the second rib and stops at the outer third of the clavicle. About 40 cc. of the anesthetic is used for further infiltration. The aponeurosis of the supraclavicular fossa is divided, the sternoclavicular articulation is opened and the muscular bundles of the pectoralis major are divided 1 cm. from their insertion on the sternum together with the aponeurosis. Blunt dissection separates these bundles from the rest of the pectoralis muscle and stops at the vascular pedicle. The posterior aspect of the sternoclavicular articulation is separated from the surrounding tissues and the clavicle is dislodged and freed. The upper aspect of the first and second ribs is anesthetized and the periosteum is detached, care being taken to avoid division of the pleura. The ribs are resected at their union with the costal cartilage and at a point beyond the posterior costal angle. The operation is completed by replacing the luxated extremity of the clavicle and reconstructing the planes of the thoracic wall. The clavicle is held in place by fibroperiosteal sutures made with interrupted catgut. A rubber tube is placed at the external angle of the wound to assure drainage and is removed in clean cases after forty-eight hours. The great advantage of this method is the possibility of resecting the ribs under visual control.

Medicina Ibera, Madrid

2: 533-564 (Oct. 21) 1933

Effects of Liver and Stomach Preparation on Experimental Anemia. C. Elósegui and F. Llopis.—p. 533.
*Intravenous Alcohol Injections in Treatment of Pneumonia. E. Jaso and M. Quero Malo.—p. 542.
Surgical Therapy in Tumors of Renal Pelvis. S. Pascual.—p. 553.

Alcohol Injections in Pneumonia in Children.—Jaso and Quero Malo advise the use of intravenous injections of alcohol in the treatment of pneumonia in children. The injections consist of 5 cc. of a 33 per cent solution of alcohol in physiologic solution of sodium chloride, preferably given as soon as the diagnosis is made and repeated daily until the crisis of the disease is reached. It is advisable to increase the dose in children more than 6 years of age. The injections have an antithermic effect and also a regulating effect on the pulse. The temperature shows a tendency to become normal following the first injection. The treatment has no influence on the rate of respiration. It has, however, a favorable influence on the disease by maintaining the resistance of the patients so that they go through the disease in a good general condition, do not lose their appetite and do not have diarrhea as a complication. It has also a favorable influence on the evolution of the pulmonary condition, which is manifest by the early appearance of crepitant râles on the third or fourth day of the disease and by the rapid resolution of the pulmonary lesions and disappearance of the pulmonary infiltration, as proved by roentgen examination of the lungs. The duration of the pneumonia is greatly decreased, especially when the injections are given from the first day of the disease. In these cases the disease follows a benign evolution and its duration is of not more than five days. The percentage of mortality from pneumonia in children is greatly reduced by the administration of this treatment. The author has obtained satisfactory results in fifteen cases, of which twelve were lobar pneumonia and three bronchopneumonia.

Deutsche medizinische Wochenschrift, Leipzig

59: 1659-1688 (Nov. 3) 1933

*Pneumoroentgenography of Knee Joint and Its Practical Results. H. Schum.—p. 1659.
Psychiatric Treatment. K. Schneider.—p. 1663.
*Relations Between Clinical Aspects of Lead Poisoning and Lead Content of Blood and Urine. E. Bass.—p. 1665.
Transmutability of Bacteria with Especial Consideration of Bacterium Typhi-Flavum. G. Sobernheim.—p. 1668.
Climatotherapy During Fall and Winter. F. Linke.—p. 1669.
After-Treatment in Spas. H. Determann.—p. 1670.
Thoughts at Conclusion of Treatment in Spas. P. Schober.—p. 1672.
After Treatment? R. von den Velden.—p. 1674.

Pneumoroentgenography of Knee Joint.—Schum maintains that internal injuries of the knee joint cannot be detected by means of the ordinary clinical examination. In order to avoid unnecessary arthrotomies and yet be able to make a definite diagnosis, he employs pneumoroentgenography. The needle, which he employs for the introduction of air into the joint, resembles the pneumothorax needle; that is, it is closed at the end and has the opening at the side. This arrangement prevents undesirable air inflation of the tissues. The lumen of the needle should not be too narrow, so that articular exudate which may be present can be discharged through it. The discharge of such an exudate indicates that the needle is located properly in the articular cavity, and the complete elimination of this fluid is an absolute requirement for the success of the roentgenography, since otherwise the air cannot penetrate into the different spaces. The inflation of the joint is done slowly. Since complete expansion of the capsule is absolutely necessary, 60 cc. of air is the least that should be introduced, but in some cases as high as 200 cc. can be injected. However, excessive amounts are not advisable, because emphysema of the soft parts will cause a distortion of the roentgen picture. All roentgenograms are made stereoscopically. One exposure is made in the sagittal plane and the other vertically to it. Occasionally an oblique exposure may be helpful. Since the demonstration of changes in the ligaments, cartilages and menisci is the primary object of pneumoroentgenography, the author employs soft ray tubes and makes the exposures as short as possible. He used this method in 233 examinations on 190 patients and never observed complications. He discusses the pathologic conditions that he discovered in the course of these examinations, such as joint mice, injuries of the crucial ligaments and of the menisci, ruptures of the cartilages and deformities of the capsule. He calls attention to the fact that air inflation of the knee joint can be used also for therapeutic purposes. He states that patients with chronic dropsy frequently asked for a new air filling because it gave them great relief. He found it helpful also in postoperative exudates and in exudates caused by injuries. In case of posttraumatic accumulation of blood or fluid, a single injection of air may be sufficient, and even inflammatory exudates, which rarely yield to puncture alone, have yielded to air filling.

Lead in Blood and Urine of Patients with Lead Poisoning.—Bass points out that the diagnosis of lead poisoning may be difficult in cases in which the lead line, stippled erythrocytes and porphyrinuria are absent. Until recently the methods for the quantitative determination of the lead content of blood and urine were inadequate. However, since P. Schmidt and his co-workers devised an electrolytic-colorimetric method, the analysis of blood and urine has proved helpful in the diagnosis, in the evaluation of benefit claims and in the estimation of the efficacy of therapeutic procedures. The method developed by Schmidt extracts the lead by precipitating the incinerated material with hydrogen sulphide, and by electrolysis the lead is deposited at the anode in the form of lead superoxide. By immersing the latter in a solution of tetramethyldiaminodiphenylmethane in glacial acetic acid a blue dyestuff is obtained and is then colorimetrically compared with a comparative solution. The margin of error never exceeds 0.02 mg. Thus the procedure has a sensitivity that permits the detection of the smallest quantities of lead. The author notes that entirely healthy persons, who have never come in contact with lead, have minute amounts of lead in their blood and urine, the average being 0.02 mg. in 100 cc. of blood or in 1,000 cc. of urine, respectively. As the threshold values above which signs of lead poisoning tend to appear, Schmidt and his co-workers have given a lead content of 0.06 mg. in 100 cc. of blood and of 0.1 mg. in 1,000 cc. of urine. From observations on forty patients with lead poisoning, the author concludes that the quantitative determination of the lead content of the blood and urine is of great value in the diagnosis and estimation of lead poisoning, but careful clinical observation cannot be dispensed with.

Deutsches Archiv für klinische Medizin, Berlin

175: 637-700 (Oct. 25) 1933

Diagnosis of Syphilis of Joints. Z. Gerškowič and M. Brenner.—p. 637.
*Osteoporotic Obesity (Pituitary Basophilism). E. Rutishäuser.—p. 640.
Criticism of Alkaline and Acid Methods for Determination of Iodine Content of Blood. H. Lücker.—p. 681.
Diagnosis of Disturbances in Pancreatic Ferments: Diastase Content of Blood in Diseases of Biliary Passages and of Duodenum. J. Brinck and Rodriquez-Olleros.—p. 691.

Osteoporotic Obesity (Pituitary Basophilism).—Rutishauser emphasizes that osteoporotic obesity must be differentiated from adiposogenital dystrophy (Fröhlich's syndrome), with which it has two symptoms in common; namely, obesity and hypoplasia of the genital organs. The differentiation can be based on the presence of osteoporosis and of high blood pressure and on the absence of visual impairment and of increased cerebral pressure, the latter two symptoms being nearly always present in adiposogenital dystrophy. The hypophyseal changes which the author observed in osteoporotic obesity are the following: a small basophil adenoma of the anterior lobe; numerous nodule-like, basophil hypertrophies and severe malformations in the region of the posterior lobe, the latter being interpreted as an agenesia, and increase in the basophil cells involving the entire anterior lobe. In one case an alcoholic cirrhosis of the liver existed. The increase in the basophil cells does not necessarily have to assume the form of an adenoma. In two cases, in which a basophil adenoma of the hypophysis could not be found, the increase in basophil cells could be traced to the primary disease, in the second case to agenesia of the posterior lobe of the hypophysis, and in a third case to alcoholic cirrhosis of the liver. The author found that the suprarenals were either well developed or hypertrophic. The hypertrophy involved both the cortex and the medulla. The ovaries were atrophied. In one case it never came to the development of the graafian follicles. The thyroids were atrophic, were poorly developed or showed degeneration of the colloid or goiter. The parathyroids were lipomatous but not always equally severe in all four parathyroids. The changes in the skeleton were of an osteoporotic nature, and in two cases the osteoporosis caused spontaneous fractures of the ribs.

Münchener medizinische Wochenschrift, Munich

80: 1729-1764 (Nov. 3) 1933

Recent Observations on Venous and Pulmonary Circulation. M. Hochrein.—p. 1729.
Diagnosis and Treatment of Ulcers of Stomach and of Duodenum. H. Schlecht.—p. 1734.
*Hypertension and Acidity of Tissues. W. Scharpff.—p. 1739.
*Fever Therapy of Trigeminal Neuralgia. T. Böckheler.—p. 1740.
Ergot Against Gangrene. W. Gerlach.—p. 1743.
Rejection of General Use of Thorium Dioxide Preparation as Contrast Medium in Pyelography. O. Hennig and J. Lechnir.—p. 1746.
Nervous Disturbances and Invalidism. A. Hanse.—p. 1747.
Case of Dropsy in Eighteenth Century: Contribution to History of Diagnosis of Cardiac Disturbances. L. Norpoth.—p. 1749.
Circulation and Respiration in Pulmonary Tuberculosis and Its Significance in Deciding Collapse Therapy. R. Cobet.—p. 1753.

Hypertension and Acidity of Tissues.—Scharpff calls attention to studies which revealed that an abnormal retention of alkali is demonstrable in disorders with a vasoneurotic component (gastric ulcer, asthma, hypertension). Investigators who studied this problem in patients suffering from hypertension found that the retention of alkali is greater in younger persons than in older ones. To verify this observation the author decided to study alkali retention in older patients having hypertension. The average age of the forty patients, whom he subjected to a sodium bicarbonate tolerance test, was 58 years. Following elimination of the morning urine, the patients rested another hour and then evacuated the bladder once more,

or a specimen was withdrawn with the catheter (test urine 1). Then they were given an intravenous injection of 20 cc. of a 10 per cent solution of sodium bicarbonate, and two hours later the bladder was emptied once more (test urine 2). The degree of acidity of the two specimens was determined by means of the colorimetric method of Wulff. The results were not uniform. The differences in the p_H values of the two specimens fluctuated between 0.3 and 2.0, and in one case the p_H value was not changed at all. If the difference in the two specimens is slight, the alkali has been retained in the tissues of the patient; if it is great, the elimination is good. The author observed that the treatment effected a considerable reduction in the blood pressure of patients who eliminated the alkali well, whereas the therapy was ineffective in those who retained large portions of the alkali. Thus the test is an aid in forecasting the probable development of hypertension.

Fever Therapy of Trigeminal Neuralgia.—In the treatment of trigeminal neuralgia, Böckheler employed a preparation which contains proteins from nonpathogenic bacilli, primarily of the colon group. The first injection was generally made with 50 units, the second with 100, the third with 200 and so on until 500 units is reached. The total number of injections is usually from five to six, but in some cases from three to four may be sufficient, and in refractory cases from seven to eight injections may be given. The fever begins usually from one to two hours after the injection. During the following two or three hours it increases to from 39 to 40 C. (102.2 to 104 F.) and after another six or eight hours it begins to decline again. In the cases of trigeminal neuralgia, but also in other forms of neuritis, it was found that the greater the pain reaction of the involved nerve during the fever the better was the therapeutic result. Complications or injurious effects were never observed. The author gives the case reports of a number of patients who were subjected to this form of fever therapy. He does not wish to create the impression that fever therapy should replace surgical therapy entirely, but he thinks that, if his results with fever therapy could be duplicated by others, it would be advisable to try fever treatment first, and to employ surgical treatment only as a last resort.

Zeitschrift f. d. ges. Experimentelle Medizin, Berlin

91: 1-266 (Oct. 21) 1933

Experimental Investigations on Spastic or Peptic Genesis of Acute Hematogenic Pilocarpine Gastritis. H. Hanke.—p. 1.
Experimental Investigations on Production of Necroses by Infection and Simultaneous Modification of Blood Circulation. P. Schmidt-Yeyland.—p. 34.
Fermentative Hemolysis. D. Kanócz.—p. 56.
*Modification of Blood Pressure by Moor Baths. H. Guthmann and L. Hess.—p. 66.
Rôle of Reticulo-Endothelial System in Fibrinogen Formation. A. Leszler and L. Pauliczky.—p. 86.
Functional Capacities of Pars Intermedia of Human Hypophysis: Investigations on Content and Site of Formation of Melanophoric Hormone. A. Jores and O. Glogner.—p. 91.
Absorption of Iodine from Baths Through Skin and Its Fate in Organism. H. Anthes and F. Salzmann.—p. 100.
Investigations on Action Mechanism of Contra-Insular Hormone of Anterior Lobe of Hypophysis: Anterior Lobe of Hypophysis, Thyroid and Carbohydrate Metabolism. H. Lucke, E. R. Heydemann and F. Duensing.—p. 106.
*Carbon Dioxide Inhalation in Treatment of Bronchial Asthma. P. Faragó.—p. 114.
Experimental Investigations on Problem of "Trypsin Intoxication" in Acute Pancreas Necrosis: Sensitive and Exact Method for Quantitative Determination of Trypsin. J. Baumann.—p. 120.
Edema Tendency and Serum Lipoid Quotient. H. Kürten.—p. 178.
Determination of Length and Position of Digestive Tract: Studies on Dead and Living Dogs for Comparison of Intravital and Postmortal Conditions. R. Nickel.—p. 193.
*Studies on Uric Acid Regarding Hyperuricemia of Renal Origin. W. Voigt.—p. 244.
Influence of Duration of Moistening of Solids on Their Capacity to be Moistened. H. Lampert.—p. 255.
Influence of Sulphide, Sulphite and Sulphate Compounds on Metabolism. M. Kojima.—p. 257.

Modification of Blood Pressure by Moor Baths.—In studies on the influence of moor baths on the blood pressure, Guthmann and Hess found that under the influence of the baths the daily fluctuations in blood pressure are comparatively mild. The less hot moor baths effect a greater reduction in the systolic pressure than do the hot baths. In contradistinction to other investigators, the authors found that after hot baths there was no increase in the systolic pressure over the initial value, either in the average values or in the greatest number of individual cases. To be sure, the number of patients who show a short increase at the beginning and end of the bath increases with the temperature of the bath, but they always remain in the minority. The diastolic pressure decreases immediately after the onset of the bath. In the hotter baths this decrease is somewhat slower. The amplitude is temporarily increased during the bath, and this increase is not merely the result of the further decrease of the diastolic pressure but particularly of the comparatively lesser decrease in the systolic pressure. Hotter baths effect a greater increase in the amplitude; in baths that are less hot the maximal increase in the amplitude takes place during the first part of the bath, while in the hotter baths the maximal amplitude is reached during the second half. The effect of water baths of the same temperature and of the same duration as moor baths is generally less prolonged. The quantitative changes likewise are often lesser. Under certain conditions, half moor baths of higher temperatures produce the same reactions as full moor baths of lower temperatures. By varying the mode of application (full and half baths) and the temperature and the duration of the baths, the reaction can be adjusted to the individual case. A complete series of moor baths does not change the blood pressure within certain limits. The primary blood pressure must be taken into consideration when the type of moor baths is decided. In case of hypotension, the patient has to be watched during the bath, because there is danger of collapse. This applies particularly to the hot baths with their greater action on blood pressure and pulse acceleration.

Carbon Dioxide in Treatment of Bronchial Asthma.—Faragó shows that, in addition to the medicinal and dietary treatments, carbon dioxide inhalation has a certain place in the symptomatic treatment of bronchial asthma. He found that some asthmatic attacks and dyspneas can be favorably influenced by the inhalation of an 8 per cent mixture of carbon dioxide and oxygen. The inhalation of this mixture effects a decrease in the alkali reserve and an increase in the lactic acid content of the blood. The p_H of the urine remains the same, while the ammonia elimination decreases.

Uric Acid and Hyperuricemia of Renal Origin.—Voigt recommends Folin's micromethod for the determination of uric acid. He stresses the advantages of the method, particularly its reliability. In order to illustrate renal insufficiency caused by "endogenic overburdening" with nitrogenous waste matter, especially uric acid, he describes a case in which pneumonia was complicated by nephritis. The renal insufficiency became manifest in the retention of large amounts of nitrogenous waste matters in the blood. The curve indicating the uric acid content of the blood was determined by means of pyrogenic uric acid tolerance tests in normal persons as well as in the patients having renal insufficiency. In normal persons presenting mild fever the curve rises only slightly, and after cessation of the fever the curve immediately returns to the normal level. In patients suffering from renal disturbances, however, the curve indicating the uric acid content rises comparatively high and the decline is extremely retarded. The uric acid content during rest and while the person is fasting shows a surprising individual constancy in normal persons, but in persons having renal insufficiency there are great fluctuations, corresponding to the impaired eliminatory function of the kidney. The difference between the uric acid content of the blood and of the cantharides blister in patients having renal insufficiency makes possible the interpretation of a hyperuricemia and helps in determining its renal origin. In the case in which pneumonia concurred with nephritis, the disappearance of the renal insufficiency was accompanied by a steplike decrease in the difference between the uric acid content of the blood and of the cantharides blister. In latent renal insufficiency an artificial fever of short duration increases the difference between the uric acid content of the blood and of the cantharides blister to an extent that in persons without renal disturbances can be obtained only if the fever is high and prolonged.

JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, JULY-DECEMBER, 1933

Abstracts of important articles in the following journals have been made in the Current Literature Department of THE JOURNAL during the past six months. Any of the journals, except those starred, will be lent by THE JOURNAL to subscribers in continental United States and Canada and to Fellows of the American Medical Association for a period not exceeding three days. Two journals may be borrowed at a time. No journals are available prior to 1925. Requests for periodicals should be addressed to the Library of the American Medical Association and should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Thus most of these journals are accessible to the general practitioner.

Acta Chirurgica Scandinavica. Stockholm.
Actas de la Sociedad de Cirugía de Madrid.
American Heart Journal. St. Louis.
American Journal of Anatomy. Philadelphia.
American Journal of Cancer. New York.
American Journal of Clinical Pathology. Baltimore.
*American Journal of Diseases of Children. A. M. A., Chicago.
American Journal of Hygiene. Baltimore.
American Journal of the Medical Sciences. Philadelphia.
American Journal of Obstetrics and Gynecology. St. Louis.
American Journal of Ophthalmology. St. Louis.
American Journal of Orthopsychiatry. Menasha, Wis.
American Journal of Pathology. Boston.
American Journal of Physical Therapy. Chicago.
American Journal of Physiology. Baltimore.
American Journal of Psychiatry. Baltimore.
American Journal of Public Health. New York.
American Journal of Roentgenol. & Rad. Therapy. Springfield, Ill.
American Journal of Surgery. New York.
American Journal of Syphilis. St. Louis.
American Journal of Tropical Medicine. Baltimore.
American Review of Tuberculosis. New York.
Annaes Paulistas de Medicina e Cirurgia. São Paulo.
Annales de Médecine. Paris.
Annali Italiani de Chirurgia. Naples.
Annals of Internal Medicine. Ann Arbor, Mich.
Annals of Medical History. New York.
Annals of Otology, Rhinology and Laryngology. St. Louis.
Annals of Pickett-Thomson Research Laboratory. London.
Annals of Surgery. Philadelphia.
Archiv für Dermatologie und Syphilis. Berlin.
Archiv für Gynäkologie. Berlin.
Archiv für Kinderheilkunde. Stuttgart.
Archiv für klinische Chirurgie. Berlin.
Archiv für Psychiatrie und Nervenkrankheiten. Berlin.
Archiv für Verdauungs-Krankheiten. Berlin.
*Archives of Dermatology and Syphilology. A. M. A., Chicago.
Archives of Disease in Childhood. London.
*Archives of Internal Medicine. A. M. A., Chicago.
Archives des Maladies de l'Appareil Digestif. Paris.
*Archives of Neurology and Psychiatry. A. M. A., Chicago.
*Archives of Ophthalmology. A. M. A., Chicago.
*Archives of Otolaryngology. A. M. A., Chicago.
*Archives of Pathology. A. M. A., Chicago.
Archives of Physical Therapy, X-Ray, Radium. Chicago.
*Archives of Surgery. A. M. A., Chicago.
Archivio Italiano di Chirurgia. Bologna.
Archivio di Patologia e Clinica Medica. Bologna.
Archivos Españoles de Pediatria. Madrid.
Archivos de Medicina, Cirugía y Especialidades. Madrid.
Beiträge zur Klinik der Tuberkulose. Berlin.
Beiträge zur klinischen Chirurgie. Berlin.
Bibliotek for Læger. Copenhagen.
Biochemische Zeitschrift. Berlin.
Brain. London.
Brasil-Medico. Rio de Janeiro.
Bristol Medico-Chirurgical Journal.
British Journal of Anæsthesia. Manchester.
British Journal of Children's Diseases. London.
British Journal of Dermatology and Syphilis. London.
British Journal of Experimental Pathology. London.
British Journal of Ophthalmology. London.
British Journal of Physical Medicine. London.
British Journal of Radiology. London.
British Journal of Surgery. Bristol.
British Journal of Tuberculosis. London.
British Journal of Urology. London.
British Medical Journal. London.
Bulletin of the Johns Hopkins Hospital. Baltimore.
Bulletin of Neurological Institute of New York. Baltimore.
California and Western Medicine. San Francisco.
Canadian Medical Association Journal. Montreal.
Canadian Public Health Journal. Toronto.
Chinese Medical Journal. Shanghai.
Chirurg. Berlin.
Clinical Journal. London.
Clinica Ostetrica. Rome.
Colorado Medicine. Denver.
Delaware State Medical Journal. Wilmington.
Dermatologische Wochenschrift. Leipzig.
Dermatologische Zeitschrift. Berlin.
Deutsche medizinische Wochenschrift. Leipzig.
Deutsche Zeitschrift für Chirurgie. Berlin.
Deutsche Zeitschrift für Nervenheilkunde. Berlin.
Deutsches Archiv für klinische Medizin. Berlin.
Día Médico. Buenos Aires.
East African Medical Journal. Nairobi.
Edinburgh Medical Journal.
Endocrinology. Los Angeles.
Finska Läkaresällskapets Handlingar. Helsingfors.
Giornale Medico dell'Alto Adige. Bolzano.
Glasgow Medical Journal.
Guy's Hospital Reports. London.
Gynecologie. Paris.
Gynécologie et Obstétrique. Paris.
Heart. London.
Hospitalstidende. Copenhagen.
Hygiea. Stockholm.
Illinois Medical Journal. Chicago.
Indian Journal of Medical Research. Calcutta.
Indian Medical Gazette. Calcutta.
Indian Medical Research Memoirs. Calcutta.
International Journal of Psycho-Analysis. London.
Irish Journal of Medical Science. Dublin.
Jahrbuch für Kinderheilkunde. Berlin.
Japanese Journal of Experimental Medicine. Tokyo.
Japanese Journal of Gastroenterology. Kyoto.
Japanese Journal of Obstetrics and Gynecology. Kyoto.
Journal of Alabama State Medical Association. Montgomery.
Journal of Allergy. St. Louis.
Journal of Anatomy. London.
Journal of the Arkansas Medical Society. Little Rock.
Journal of Bacteriology. Baltimore.
Journal of Biological Chemistry. Baltimore.
Journal of Bone and Joint Surgery. Boston.
Journal de Chirurgie. Paris.
Journal of Clinical Investigation. New York.
Journal of Comparative Neurology. Philadelphia.
Journal of Experimental Medicine. New York.
Journal of the Florida Medical Association. Jacksonville.
Journal of General Physiology. Baltimore.
Journal of Hygiene. London.
Journal of Immunology. Baltimore.
Journal of the Indiana State Medical Association. Indianapolis.
Journal of Industrial Hygiene. Boston.
Journal of Infectious Diseases. Chicago.
Journal of Iowa State Medical Society. Des Moines.
Journal of Kansas Medical Society. Topeka.
Journal of Laboratory and Clinical Medicine. St. Louis.
Journal of Laryngology and Otology. Edinburgh.
Journal of Medical Association of Georgia. Atlanta.
Journal of Medical Society of New Jersey. Orange.
Journal of Mental Science. London.
Journal of Michigan State Medical Society. Grand Rapids.
Journal of Missouri State Medical Association. St. Louis.
Journal of Nervous and Mental Disease. New York.
Journal of Neurology and Psychopathology. London
Journal of Nutrition. Springfield, Ill.
Journal of Obstetrics and Gynæcology of British Empire. Manchester.
Journal of Oklahoma State Medical Association. Muskogee.
Journal of Oriental Medicine. South Manchuria.
Journal of Pathology and Bacteriology. Edinburgh.
Journal of Pediatrics. St. Louis.
Journal of Pharmacology and Experimental Therapeutics. Baltimore.
Journal of the Philippine Islands Medical Association. Manila.
Journal of Physiology. London.
Journal of South Carolina Medical Association. Greenville.
Journal of State Medicine. London.
Journal of Tennessee State Medical Association. Nashville.
Journal of Thoracic Surgery. St. Louis.
Journal of Tropical Medicine and Hygiene. London.
Journal d'Urologie Médicale et Chirurgicale. Paris.
Journal of Urology. Baltimore.
Kentucky Medical Journal. Bowling Green.
Klinicheskaya Meditsina. Moscow.
Klinische Wochenschrift. Berlin.

*Cannot be lent.

Lancet. London.
Laryngoscope. St. Louis.
Maine Medical Journal. Portland.
Medical Annals of District of Columbia. Washington.
Medical Bulletin of the Veterans' Administration. Washington, D. C.
Medical Journal of Australia. Sydney.
Medical Journal and Record. New York.
Medicina Ibera. Madrid.
Medicine. Baltimore.
Medizinische Klinik. Berlin.
Military Surgeon. Washington, D. C.
Minerva Medica. Turin.
Minnesota Medicine. St. Paul.
Monatsschrift für Geburtshülfe und Gynäkologie. Berlin.
Monatsschrift für Kinderheilkunde. Berlin.
Münchener medizinische Wochenschrift. Munich.
Nebraska State Medical Journal. Lincoln.
New England Journal of Medicine. Boston.
New Orleans Medical and Surgical Journal.
New York State Journal of Medicine. New York.
Nordisk Medicinsk Tidskrift. Stockholm.
Norsk Magasin for Lægevidenskapen. Oslo.
Northwest Medicine. Seattle.
Novyy Khirurgicheskiy Arkiv. Dnepropetrovsk.
Ohio State Medical Journal. Columbus.
Paris Médical.
Pennsylvania Medical Journal. Harrisburg.
Philippine Journal of Science. Manila.
Policlinico (Pract. Sect., Med. Sect. and Surg. Sect.). Rome.
Polska Gazeta Lekarska. Lwów.
Practitioner. London.
Prensa Médica Argentina. Buenos Aires.
Presse Médicale. Paris.
Psychiatric Quarterly. Albany, N. Y.
Psychoanalytic Quarterly. Albany, N. Y.
Public Health Reports. Washington, D. C.
Puerto Rico Journal of Public Health & Tropical Medicine. San Juan.
Quarterly Bulletin of Health Organization of League of Nations. Geneva.
Quarterly Journal of Medicine. Oxford.
Radiology. St. Paul.
Revista de Gynecologia e d'Obstetricia. Rio de Janeiro.
Revue de Chirurgie. Paris.
Revue Française d'Endocrinologie. Paris.
Revue Française de Pédiatrie. Paris.
Revue Neurologique. Paris.
Revue Sud-Américaine de Médecine et de Chirurgie. Paris.
Rhode Island Medical Journal. Providence.
Riforma Medica. Naples.
Rivista di Clinica Pediatricia. Florence.
Rivista Italiana di Ginecologia. Bologna.
Schweizerische medizinische Wochenschrift. Basel.
Science. New York.
Semana Médica. Buenos Aires.
Siglio Medico. Madrid.
South African Medical Journal. Cape Town.
Southern Medical Journal. Birmingham, Ala.
Southwestern Medicine. Phoenix, Ariz.
Sovetskaya Khirurgiya. Moscow.
Sovetskaya Klinika. Moscow.
Strahlentherapie. Berlin.
Surgery, Gynecology and Obstetrics. Chicago.
Svenska Läkaresällskapets Handlingar. Stockholm.
Texas State Journal of Medicine. Fort Worth.
Tubercle. London.
Ugeskrift for Læger. Copenhagen.
United States Naval Medical Bulletin. Washington, D. C.
Upsala Läkareförenings Förhandlingar. Uppsala.
Virginia Medical Monthly. Richmond.
Voprosy Pediatrii i Materinstva. Moscow.
Western Journal of Surgery, Obstetrics and Gynecology. Portland, Ore.
West Virginia Medical Journal. Charleston.
Wiener klinische Wochenschrift. Vienna.
Wisconsin Medical Journal. Madison.
Yale Journal of Biology and Medicine. New Haven, Conn.
Zeitschrift für die gesamte experimentelle Medizin. Berlin.
Zeitschrift für Geburtshilfe und Gynäkologie. Stuttgart.
Zeitschrift für Immunitätsforschung. Jena.
Zeitschrift für Kinderheilkunde. Berlin.
Zeitschrift für klinische Medizin. Berlin.
Zeitschrift für Krebsforschung. Berlin.
Zeitschrift für Tuberkulose. Leipzig.
Zeitschrift für urologische Chirurgie. Berlin.
Zentralblatt für Chirurgie. Leipzig.
Zentralblatt für Gynäkologie. Leipzig.

SUBJECT INDEX

This is an index to all the reading matter in THE JOURNAL. In the Current Medical Literature Department only the articles which have been abstracted are indexed.

The letters used to explain in which department the matter indexed appears are as follows: "BI," Bureau of Investigation; "E," Editorial; "C," Correspondence; "ME," Medical Economics; "ab," abstract; the star (*) indicates an original article in THE JOURNAL.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths," "Medicolegal Abstracts" and "Societies" are indexed under these titles at the end of the letters "B," "D," "M," and "S." State board examinations are entered under the general heading State Board Reports, and not under the names of the individual states. Matter pertaining to the Association is indexed under "American Medical Association." The name of the author, in brackets, follows the subject entry.

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Obstetrics, Story of Childbirth, 1506; (reply) [Findley] 1899—C
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Am.—American	*Med.—Medicine*
A.—Association	*Nat.—National*
Coll.—College	*Phar.—Pharmaceutical*
Conf.—Conference	*Phys.—Physicians*
Cong.—Congress	*Rev.—Revision*
Conv.—Convention	*Ry.—Railway*
Dist.—District	*S.—Surgical*
Hosp.—Hospital	*Soc.—Society*
Internat.—International	*Surg.—Surgery*
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